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**PREVENTION AND TREATMENT
OF TUBERCULOSIS IN THE
ADMINISTRATIVE COUNTY OF LANCASTER.**

Report of the Central Tuberculosis Officer
of the Lancashire County Council
for the Year 1936.

C. Tinling & Co. Ltd., Liverpool, London and Prescott.
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COUNTY TUBERCULOSIS COMMITTEE

(1937).

The Chairman of the County Council :

*†Sir William Hodgson, J.P.

The Vice-Chairman of the County Council :

†P. Macdonald, Esq., J.P.

Chairman of Committee :

*†E. Boothman, Esq., J.P.

Vice-Chairman :

*Sir Thomas S. Tomlinson, J.P.

COUNTY ALDERMEN—

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H. F. Jeffery, Esq., M.B., Ch.B.,
J.P.

*C. J. Trimble, Esq., C.B., C.M.G.,
L.R.C.P., D.P.H., J.P., D.L.

COUNTY COUNCILLORS—

L. Allen, Esq., J.P.

*H. Bright, Esq.

*E. Clegg, Esq.

F. H. Dodd, Esq.

M. F. Hendron, Esq., M.B.,
B.Ch., B.A.O.

T. E. Jesson, Esq., J.P.

*Canon A. Kershaw, M.A.

J. Kershaw, Esq.

W. J. Lucas, Esq., J.P., F.I.O.B.

*P. F. Mannix, Esq., M.D., M.Ch.,
B.A.O., J.P.

W. T. Miller, Esq., J.P.

R. S. Robson, Esq., J.P.

*E. Tye, Esq.

R. B. Yates, Esq.

* Members of the Sanatorium and Hospital Sub-Committee.

† County Aldermen.

MEDICAL AND NURSING STAFF OF THE TUBERCULOSIS DEPARTMENT, Oct. 1937.

Central Tuberculosis Officer—G. Lissant Cox, M.A., M.D. (Camb.).

STAFF OF THE DISPENSARY AREAS AND COUNTY SANATORIA AND HOSPITALS.

Area No. 1. (Population 252,621).

(Lancaster, Morecambe and Heysham, Garstang Rural (part), Preston Rural, Walton-le-Dale, Chorley, and Horwich districts).

Consultant Tuberculosis Officer and Visiting Physician, Lancaster Pulmonary Hospital (36 beds)—G. H. Leigh, M.D., Ch.B., D.P.H. (Manch.).

Assistant Tuberculosis Officer—F. C. S. Bradbury, M.D., B.Ch. (Belf.), B.Hy., D.P.H. (Durh.).

Area No. 2. (Population 327,593).

(Clitheroe, Colne, Nelson, Burnley Rural, Blackburn Rural, Accrington, Darwen, Haslingden, Rawtenstall, and Bacup districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Withnell Pulmonary Hospital (52 beds)—B. MacPhee, M.B., Ch.B. (Glas.), D.P.H. (Camb.).

Assistant Tuberculosis Officers—S. C. Adam, M.B., Ch.B. (Glas.), D.P.H. (Lond.); and J. N. Whyte, M.D., B.Ch., B.A.O., D.P.H. (Belf.) (2 days per week).

Area No. 3. (Population 375,047).

(Ramsbottom, Littleborough, Radcliffe, Heywood, Crompton, Prestwich, Middleton, Chadderton, Failsworth, Ashton-under-Lyne, Mossley, and Denton districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Wolstenholme Pulmonary Hospital (55 beds)—G. Fletcher, M.A., M.D. (Glas.), M.R.C.P. (Lond.), D.P.H. (Camb.).

Assistant Tuberculosis Officers—J. L. Armour, M.B., Ch.B. (Liverp.), M.R.C.S. (Eng.), L.R.C.P. (Lond.); and W. Fettes, M.B., Ch.B., D.P.H. (Aberd.).

Area No. 4. (Population 366,838).

(Westhoughton, Atherton, Farnworth, Leigh, Swinton and Pendlebury, Eccles, and Stretford districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Peel Hall Pulmonary Hospital (56 beds)—G. Jessel, M.A., M.D. (Oxon.), D.P.H. (Manch.), A.R.P.S.

Assistant Tuberculosis Officers—A. B. Jamieson, M.B., Ch.B. (Edin.); and H. J. Villiers, L.R.C.P.I., L.R.C.S.I.

Area No. 5. (Population 285,199).

(West Lancashire Rural, Great Crosby, Waterloo-with-Seaforth, Newton-in-Makerfield, Whiston Rural, Warrington Rural, and Widnes districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Rufford Pulmonary Hospital (52 beds)—C. W. Laird, B.A., M.D. (Dublin), D.P.H. (Liverp.).

Assistant Tuberculosis Officers—C. Berry, L.R.C.P., L.R.C.S. (Edin.), L.R.F.P.S. (Glas.), D.P.H. (R.C.P.S.I.); and J. N. Whyte, M.D., B.Ch., B.A.O., D.P.H. (Belf.) (2 days per week).

High Carley Sanatorium (118 beds), Oubas House Children's Sanatorium (21 beds), and Furness Dispensary Area (Population 38,022).

(Dalton-in-Furness, Grange-over-Sands, Ulverston, and Ulverston Rural districts).

Medical Superintendent and Consultant Tuberculosis Officer—G. Leggat, M.B., Ch.B., D.P.H. (Aberd.).

Assistant Medical Superintendent—D. O. Hughes, M.D., Ch.B., D.P.H. (Liverp.).

Elswick Sanatorium (70 beds) and Fylde Dispensary Area (Population 88,170).

(Fleetwood, Thornton Cleveleys, Lytham St. Annes, Fylde Rural, Garstang Rural (part), and Kirkham districts).

Medical Superintendent and Consultant Tuberculosis Officer—G. B. Charnock, L.R.C.P., L.R.C.S. (Edin.), L.R.F.P.S. (Glas.), D.P.H. (Liverp.).

Assistant Tuberculosis Officer—J. N. Whyte, M.D., B.Ch., B.A.O., D.P.H. (Belf.) (1½ days per week).

Wrightington Hospital (226 beds) and Wigan County Dispensary Area (Population 109,410).

(Ashton-in-Makerfield, Hindley, Ince-in-Makerfield, and Wigan Rural districts).

Medical Superintendent and Consultant Tuberculosis Officer—E. H. A. Pask, M.D. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Assistant Tuberculosis Officer—E. H. W. Deane, M.B., B.S. (Melbourne).

Assistant Medical Superintendent—J. Dobson, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Junior Assistant Medical Officer—W. G. Timmis, M.B., Ch.B. (Liverp.).

Chadderton Pulmonary Hospital (44 beds).

Visiting Medical Superintendent—E. T. Holden, M.B., Ch.B. (Birm.), M.R.C.S. (Eng.), L.R.C.P., D.P.H. (Lond.).

Heath Charnock Pulmonary Hospital (39 beds).

Visiting Medical Superintendent and Medical Officer to the Chorley Joint Hospital Board—J. Rigby, M.B., Ch.B., D.P.H. (Manch.).

Lancaster, Withnell, Wolstenholme, Peel Hall, and Rufford Pulmonary Hospitals.

The Consultant Tuberculosis Officers of Dispensary Areas Nos. 1, 2, 3, 4 and 5, respectively, are the visiting Medical Superintendents of these Hospitals, as mentioned in the foregoing list of staff.

CONSULTING SURGICAL STAFF.

T. P. McMurray, M.Ch., F.R.C.S. (Edin.), and

Harry Platt, M.D. (Manch.), M.S. (Lond.), F.R.C.S. (Eng.),

Visiting Consulting Orthopædic Surgeons, Wrightington Hospital.

H. H. Bywater, M.D. (Manch.), D.Ch.O. (Liverp.), F.R.C.S. (Edin.),

Visiting Consulting Ophthalmic Surgeon, Wrightington Hospital.

CONSULTING SURGICAL STAFF—contd.

C. A. Wells, M.B., Ch.B. (Liverp.), F.R.C.S. (Eng.), L.R.C.P. (Lond.),
Visiting Consulting Urological Surgeon, Wrightington Hospital.

H. Morriston Davies, M.D., M.Ch. (Camb.), F.R.C.S. (Eng.),
Visiting Consulting Chest Surgeon, Elswick and High Carley Sanatoria, and Peel Hall Pulmonary Hospital.

F. R. Edwards, M.B., Ch.B. (Liverp.), F.R.C.S. (Eng.), L.R.C.P. (Lond.),
Junior Visiting Consulting Chest Surgeon, Elswick and High Carley Sanatoria, and Peel Hall Pulmonary Hospital.

J. Halton, M.B., Ch.B. (Liverp.),
Visiting Anæsthetist, High Carley Sanatorium.

VISITING DENTAL SURGEONS.

High Carley and Oubas House Sanatoria—A. Miller, L.D.S. (R.C.S., Eng.).

Elswick Sanatorium—R. D. Allison, L.R.C.P., L.R.C.S. (Edin.),
 L.R.F.P.S. (Glas.), L.D.S. (R.C.S., Edin.).

Wrightington Hospital—J. J. Ward, L.D.S. (R.C.S., Eng.).

MATRONS.

High Carley and Oubas House Sanatoria	...	...	E. Woosey.
Elswick Sanatorium	...	...	A. Jones.
Chadderton Pulmonary Hospital	...	...	I. Felstead.
Heath Charnock Pulmonary Hospital	...	...	H. Sinclair.
Lancaster Pulmonary Hospital	...	...	L. Clark.
Peel Hall Pulmonary Hospital	...	...	E. Simmons.
Rufford Pulmonary Hospital	...	...	S. Holmes.
Withnell Pulmonary Hospital	...	...	D. Willman.
Wolstenholme Pulmonary Hospital	...	...	E. G. Glass.
Wrightington Hospital	...	...	E. Moseley.

TUBERCULOSIS HEALTH VISITORS.

Area No. 1.—L. Walker*, J. Skelcher, F. D. Abbott*, G. M. Hunter.

Area No. 2.—R. Lambert*, A. Munro*, M. Duggan*, L. F. Norwood,
 E. Watterson, H. M. Alcock*.

Area No. 3.—M. A. Potter, H. Dewsnap*, I. F. Macdonald*, C.
 Guilfoyle*, A. Flynn*, W. Swift, M. Sherwen.

Area No. 4.—M. B. Jones, H. M. Shakespeare*, F. G. Smith, A.
 Dickinson, K. Blakemore, M. Gibson*, E. M. Crone.

Area No. 5.—E. Walch, M. J. Wilson*, L. Farquhar*, I. M. Corfield,
 M. J. McKeown*.

Furness Area.—E. A. Duston.

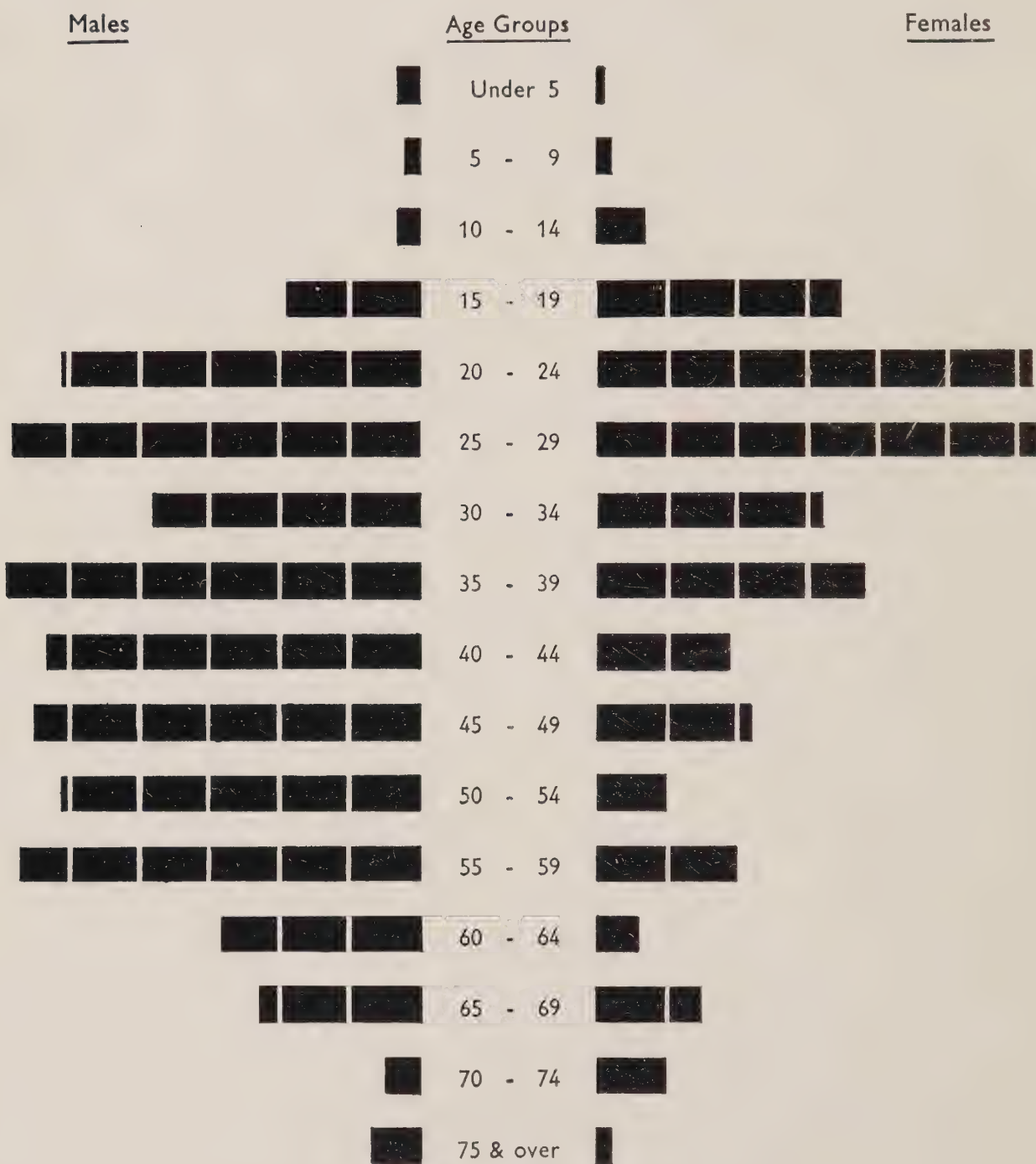
Fylde Area.—A. Tweedy*.

Wigan County Area.—E. Walters*, M. J. Evans.

* Possesses a health visitor's or sanitary certificate.

ADMINISTRATIVE COUNTY OF LANCASTER.

Deaths from Pulmonary Tuberculosis in 1936, according to sex and age-group.



A block this size represents 10 deaths.

NOTE: The mortality among females is heaviest between ages 20 and 29, unlike the males whose mortality extends fairly evenly between ages 20 and 59.

Allowing for the difference in the population of the sexes, for every 100 deaths of females in 1936 there were 164 deaths of males (see page 1).

[Diagram drawn in Tuberculosis Department.]

REPORT
OF THE
CENTRAL TUBERCULOSIS OFFICER
FOR THE YEAR 1936.

*To the Chairman and Members of the
Lancashire County Council.*

LADIES AND GENTLEMEN,

I have the honour to submit the twenty-third annual report on the work of the tuberculosis department, and in this introductory portion will give briefly some of the principal features of the work in 1936.

Tuberculosis incidence and mortality.

The death-rate from pulmonary tuberculosis in 1936 (0·46) is the same as in 1934 and 1935. The diagram opposite shows the number of deaths from pulmonary tuberculosis in 1936 according to sex and age-group. The number of new cases of pulmonary tuberculosis reported in 1936 is again the lowest on record ; in fact since 1924 each year has shown a reduction varying from 6 to 148 cases.

With regard to non-pulmonary tuberculosis, the death-rate of 0·10 per 1,000 of the population remains the same as in 1935 when it was the lowest on record, being exactly half of what it was in 1925 and less than one-third of the rate in 1914. The number of new cases of non-pulmonary tuberculosis reported during the year shows an increase of 43 over the previous year.

Taking pulmonary and non-pulmonary tuberculosis together, the death-rate in 1936 (0·56) is the lowest ever recorded, and is less than one-half of that in 1915, being in fact 43 per cent. of the rate for that year.

A further indication of the measure of the decline in tuberculosis is supplied by ascertaining the proportion of tuberculosis deaths from among the deaths from all causes. On page 5 there is a table which shows that the percentage of deaths from tuberculosis to deaths from all causes in the Administrative County was 7·77 in 1921, 6·73 in 1926, 5·54 in 1931, and 4·42 in 1936.

The following are the death-rates in 1936 from tuberculosis (all forms) per 1,000 of the population in the Administrative County, in counties with a population in the region of 1,000,000, and in England and Wales :—Lancashire, 0·56 ; Durham, 0·75 ; Essex, 0·54 ; Kent, 0·61 ; Middlesex, 0·64 ; Surrey, 0·54 ; West Riding of Yorkshire, 0·55 ; and England and Wales, 0·69.

The tuberculosis scheme.

The Lancashire County Council scheme covers the whole of the Administrative County (population 1,842,900, area 1,038,130 acres). A special feature of the scheme, and of fundamental importance, is the method whereby the dispensary work is combined with the hospital or sanatorium work. The County has been divided into (i) five large dispensary areas or units, average population 321,000, each with a small sanatorium-hospital ; and (ii) three small dispensary areas surrounding the three largest institutions, the area and the institution together forming a unit. By this organisation the whole County is served by team work ; each tuberculosis officer has beds like any private consultant, and the divorce so common between the dispensary unit and the institutional unit does not occur.

Each area is in the charge of a consultant tuberculosis officer with medical assistants, nursing staff, and clerical staff. Ordinary symptomatic treatment is not undertaken at the dispensaries, the tuberculosis officers being concerned with the diagnosis and special treatment of patients, and measures for the prevention of the disease. The County Council own or lease 24 tuberculosis dispensaries situated in convenient centres in the County, and own or rent accommodation at sanatoria and hospitals for 975 beds, of which 726 are at eleven County sanatoria and hospitals. Diagnosis and treatment is, and always has been, provided free of cost. The number of cases of tuberculosis on the dispensary registers on the 1st January, 1937, was 7,402.

The net expenditure on tuberculosis services for 1936–37 was £195,075, equal to a rate of 4·75d. in the £. Towards the expenditure

there is now an amount included in the General Exchequer Grant receivable under the Local Government Act, 1929 ; it is not specifically allocated to the tuberculosis service, but is a general credit to the County Fund. Previous to the passing of the Act the Government made an annual grant based upon 50 per cent. of the net approved expenditure ; for 1928–29 their grant amounted to £74,105.

Why are many tuberculous patients not first treated in the early stage ?

The Prime Minister, speaking in London on the 30th September, 1937, made the following remarks when inaugurating the National Campaign to Encourage the Wider Use of the Health Services :—
 “ When I first began to take an interest in public health—long before
 “ I went into Parliament—tuberculosis was the most terrible and fatal
 “ of all the familiar diseases. Well, now, thanks to the vigorous efforts
 “ that have been made to control it, the tuberculosis death-rate in
 “ 1936 was less than half what it was on the average of the first ten years
 “ of this century. In fact, we can say to-day that tuberculosis is an
 “ eminently curable disease, provided that it is diagnosed and dealt
 “ with in the early stages. Well, to try and ensure that, we have made
 “ tuberculosis a compulsorily notifiable disease, yet we still find that
 “ a great number of cases are not brought to the notice of the medical
 “ officer of health until the later stages when it is too late to effect a
 “ cure and sometimes not even until after death has taken place. Too
 “ often that means that the patient has ignored the early symptoms
 “ and has not gone to the doctor until the disease had become well
 “ established.”

It so happens that a special investigation has been made for this report (Chapter V, pages 19 to 21) on the problem of (1) duration of illness up to time of consulting medical attendant ; (2) period under medical attendant before first examination by tuberculosis officer ; and (3) duration of life after first examination by tuberculosis officer.

Two groups have been taken, one being a consecutive number of deaths from pulmonary tuberculosis in the Administrative County occurring in 1920 and the other the corresponding deaths occurring in 1935. These groups consist of patients who had more or less advanced disease with sputum positive.

It was found that the average period of symptoms before the patients attended their doctor was 11·7 months in 1920 and 9·5 months in 1935. The average time such patients were under their doctor before the first examination by the tuberculosis officer was 5·0 months in 1920 decreasing to 3·0 months in 1935.

It is interesting to note that the average duration of life after the first examination by the tuberculosis officer was 18·3 months in 1920 increasing to 27·4 months in 1935.

The Lancashire investigation supports the statement of the Prime Minister that too many patients ignore the early symptoms and delay visiting their doctor. This, of course, is partly due to the insidious nature of the disease, and might be overcome in part by periodic x-ray examination of young adults. There is also room for a further reduction in the average time a patient is under his doctor before reference to the tuberculosis officer.

Co-operation with medical practitioners, sanitary authorities, and health officials.

The results of the tuberculosis scheme would be very different if the relations with the medical practitioners in the County, together with the sanitary authorities and their medical officers and sanitary inspectors, had not been of the most cordial and satisfactory character. I take this opportunity of acknowledging such co-operation from these sources. It is most satisfactory that 92 per cent. of new cases (excluding contacts) were sent *before notification* to the tuberculosis officers for an opinion as to diagnosis or treatment.

A copy of this report is being forwarded to each general practitioner practising in the Administrative County. For the special interest of these doctors, Chapter III "The Practitioner and the Dispensary" has been introduced; skiagrams illustrating interesting cases of tuberculosis have been included in other chapters.

Special contributions by medical staff.

The following special contributions by members of the medical staff are printed in this report :—

The Practitioner and the Dispensary, by Dr. G. Fletcher (pages 11 to 15).

Healing in Pulmonary Tuberculosis : A Radiological Study, by Dr. G. Jessel (pages 16 to 18).

Arthrodesis in Tuberculosis of the Hip Joint, by Dr. E. H. A. Pask (pages 113 to 115).

Dispensary Work.

A table showing the dispensary work done in Lancashire during 1936 compared with the rest of the country is given on page 35.

Interesting comparisons between Lancashire and all counties in

England are contained in the undermentioned figures which are calculated per 100 deaths from tuberculosis :—

	Lancashire.	All counties in England.
Total new cases and new contacts diagnosed as suffering from tuberculosis and receiving treatment under the official scheme	162	141
Number of sputum examinations	516	368
Number of x-ray examinations	999	414
Number of home visits by tuberculosis health visitors ...	4,013	2,542
Number of patients on the dispensary registers at the end of the year	707	675
Number of T.B. plus cases on the dispensary registers at the end of the year	265	243
Number of cases remaining undiagnosed at the end of the year	3	26
Number of cases removed from the dispensary registers as recovered	62	51

Surgical treatment of pulmonary tuberculosis.

On page 55 a table is given showing the condition at the end of 1936 of 72 patients who, during 1933, underwent the operation of phrenicectomy.

Mr. Morrision Davies is the visiting consulting chest surgeon, and pays periodical visits to the High Carley Sanatorium, the Elswick Sanatorium, and the Peel Hall Pulmonary Hospital.

The following statement shows the number of living patients on the registers on 31st December, 1936, who had undergone surgical treatment for their chest condition :—Artificial pneumothorax, 462 ; artificial pneumothorax with division of adhesions, 15 ; phrenicectomy or phrenic crush, 78 ; phrenicectomy or phrenic crush in association with artificial pneumothorax, 123 ; thoracoplasty, 10 ; thoracoplasty in association with artificial pneumothorax, 2 ; scalenectomy with artificial pneumothorax, 1 ; total, 691, representing 16·2 per cent. of the 4,257 pulmonary cases on the registers.

I wish to draw attention to the report of Dr. G. Leggat on the surgical work done at the High Carley Sanatorium (see pages 86 to 89).

X-ray examinations.

The provision of x-ray plants for the diagnosis and treatment of cases of tuberculosis is as essential as the provision of the stethoscope and thermometer. The use made of x-rays in this County in 1936 is shown by the following figures :—At County dispensaries, 10,469 x-ray examinations were made, and 9,805 at County sanatoria and hospitals. The x-ray examinations of dispensary patients represent 999 per 100 deaths from tuberculosis.

Medical staff.

The County Council in July, 1937, authorised the appointment of an additional assistant tuberculosis officer in order to cope with the

increasing population in Dispensary Area No. 5 (south-west Lancashire) and the greater amount of medical work done at the institutions and the dispensaries. The appointment will allow of certain re-arrangements to the existing staff and provide extra assistance for the Elswick Sanatorium and the Fylde Dispensary Area in addition to Area No. 5.

Progress and future requirements in the tuberculosis scheme.

Below is a statement of the progress made and the requirements at dispensaries, sanatoria and pulmonary hospitals:—

Ashton-under-Lyne Dispensary. The erection of the new dispensary premises in Lees Street, to replace the existing dispensary at Boston House, Warrington Street, was commenced on the 11th January, 1937, and is proceeding satisfactorily. A reproduction of the plans was printed in the annual report for 1935.

Widnes Dispensary. The erection of new premises in Chapel Street, to replace the existing dispensary at Brendan House, Widnes Road, was commenced on the 4th October, 1937. The estimated cost of the premises and site is £3,635.

Huyton Dispensary. In order to cope with the greatly increasing population of Huyton-with-Roby and Whiston, as the result of extensive public and private housing schemes being undertaken there, suitable premises at 95, Blue Bell Lane, Huyton, were purchased on 2nd October, 1937, for use as a tuberculosis dispensary. The dispensary will also serve Prescot.

Seaforth Dispensary. Search is being made for suitable property to serve as a chief dispensary in place of the present unsatisfactory premises in Claremont Road.

Eccles Dispensary. The premises 28 and 30, Gilda Brook Road, Eccles, where the centralised medical work for Area No. 4 is done, are proving too small for the expansion of such work, and removal to more commodious premises will have to be considered.

High Carley Sanatorium. The work on the alterations and extensions at this sanatorium, for which a loan of £18,633 has been sanctioned, was commenced on the 12th July, 1937 (see page 85).

Heath Charnock Pulmonary Hospital. The scheme of re-organisation has been completed, and the x-ray apparatus was installed in March, 1937.

Withnell Pulmonary Hospital. A pavilion of seven cubicles with covered verandah has been erected to replace the wooden sleeping shelters. The pavilion is heated and each cubicle is fitted with a wardrobe and provided with wireless. A wooden building has been erected near the kitchen to provide dining rooms for the nurses and the maids.

I have again to thank my medical colleagues and the nursing and clerical staffs for continued help. I have had very valuable help from my principal clerk, Mr. H. F. Hughes, M.A. (Admin.), especially in preparing this report, and have, in addition, to thank the public health department for their co-operation.

I am,

Your obedient Servant,

G. LISSANT COX,

Central Tuberculosis Officer.

County Offices, Preston.

15th October, 1937.

I.—TUBERCULOSIS INCIDENCE AND MORTALITY IN 1936.

The principal features of tuberculosis incidence and mortality in 1936 in the Administrative County, which contains an estimated population of 1,842,900, are as follow :—

1. The death-rate (0·46 per 1,000 of the population) from **pulmonary** tuberculosis in the County remains the same as in 1934 and 1935; it continues below the pulmonary rate (0·58) for England and Wales.

2. The number of new pulmonary cases reported in 1936 is again the lowest on record; each year since 1924 has shown a reduction, varying from 6 to 148, in the number of new cases. Comparing 1924 with 1936, the total reduction in the new pulmonary cases is 742 or 36·4 per cent.

3. Pulmonary tuberculosis is again more prevalent among males than females in regard to both cases and deaths. Allowing for the difference in the population of the sexes, for every 100 deaths of females in 1936 there were 164 deaths of males (against 100 : 138 in 1935).

4. In 1936 the largest number of deaths from pulmonary tuberculosis among females occurs in the age-group 15–25, followed closely by the age-group 25–35 (see Table 3, page 4).

5. The greatest mortality from pulmonary tuberculosis among males in 1936 occurs in the age-group 35–45, followed by the age-group 45–55.

6. The death-rate (0·10 per 1,000 of the population) from **non-pulmonary** tuberculosis remains the same as in 1935, when it was the lowest on record. It is now only one-third of the rate recorded in 1914. The rate for England and Wales is 0·10 in 1936.

7. The number of new cases of non-pulmonary tuberculosis reported in 1936 shows an increase of 43 over the previous year.

8. With regard to non-pulmonary tuberculosis, the most striking decline has occurred in the age-group 0–5 years; in 1914 the deaths in this group totalled 286, whereas in 1936 there were only 56.

9. The saving in human life by the reduction in the County death-rate from all forms of tuberculosis is considerable; for example, if the death-rate in 1936 had been the same as in 1914 there would have been 2,193 deaths instead of the actual number of 1,048—a difference of 1,145.

NEW CASES OF TUBERCULOSIS.

The following Table 1 shows since 1918 the total number of new cases of pulmonary and non-pulmonary tuberculosis reported in each year; the case-rate for pulmonary tuberculosis is also given :—

Year	Pulmonary tuberculosis				Non-pulmonary tuberculosis		
	Cases notified (<i>i.e.</i> , during life)	Cases reported at time of death only	Total known cases	Case-rate per 1,000 of population	Cases notified (<i>i.e.</i> , during life)	Cases reported at time of death only	Total known cases
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1918	2,534	303	2,837	1·64	885	137	1,022
1919	2,105	221	2,326	1·34	847	104	951
1920	2,084	177	2,261	1·30	968	122	1,090
1921	2,044	135	2,179	1·23	899	96	995
1922	1,863	105	1,968	1·11	956	83	1,039
1923	1,937	85	2,022	1·13	1,188	74	1,262
1924	1,972	64	2,036	1·14	1,120	65	1,185
1925	1,846	67	1,913	1·07	1,027	57	1,084
1926	1,828	58	1,886	1·05	953	32	985
1927	1,794	54	1,848	1·02	1,045	42	1,087
1928	1,660	56	1,716	0·94	956	51	1,007
1929	1,517	62	1,579	0·87	913	61	974
1930	1,527	46	1,573	0·87	982	61	1,043
1931	1,460	61	1,521	0·84	862	51	913
1932	1,477	37	1,514	0·83	825	28	853
1933	1,453	45	1,498	0·82	780	31	811
1934	1,315	35	1,350	0·74	774	46	820
1935	1,305	35	1,340	0·73	672	31	703
1936	1,248	46	1,294	0·70	722	24	746

The decline—continuous since 1924—in the number of new cases of pulmonary tuberculosis is seen in column (4) of the above table. Comparing 1936 with 1924, the reduction which has taken place in the various age-groups is as follows :—

Males—0–5, 92·5 per cent. ; 5–15, 75·2 per cent. ; 15–25, 39·5 per cent. ; 25–35, 29·5 per cent. ; 35–45, 34·6 per cent. ; 45–55, 23·8 per cent. ; 55–65, 1·0 per cent.

Females—0–5, 73·3 per cent. ; 5–15, 63·0 per cent. ; 15–25, 31·4 per cent. ; 25–35, 30·9 per cent. ; 35–45, 52·0 per cent. ; 45–55, 52·1 per cent. ; 55–65, 51·0 per cent.

The notifications referred to in columns (2) and (6) are dealt with further in Appendix II, where folding Tables B, C, and D, are inserted.

DEATHS AND DEATH-RATES FROM TUBERCULOSIS.

Table 2 below shows the number of deaths registered and the death-rates recorded during the years 1913 to 1936 in the Administrative County :—

Year	Population.	Deaths.			Death-rate per 1,000 of population.		
		Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)	Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1913	1,749,659	1,441	527	1,968	0·82	0·30	1·12
1914	1,748,289	1,523	572	2,095	0·87	0·32	1·19
1915	1,666,488	1,614	555	2,169	0·96	0·34	1·30
1916	1,620,062	1,685	471	2,156	1·04	0·29	1·33
1917	1,568,656	1,584	466	2,050	1·00	0·30	1·30
1918	1,537,951	1,652	435	2,087	1·07	0·28	1·35
1919	1,662,716	1,339	358	1,697	0·80	0·22	1·02
1920	1,728,967	1,323	396	1,719	0·76	0·23	0·99
1921	1,758,738	1,301	376	1,677	0·73	0·21	0·95
1922	1,766,027	1,362	389	1,751	0·77	0·22	0·99
1923	1,772,658	1,250	412	1,662	0·70	0·23	0·93
1924	1,782,800	1,215	339	1,554	0·68	0·19	0·87
1925	1,785,500	1,205	361	1,566	0·67	0·20	0·87
1926	1,788,500	1,158	286	1,444	0·64	0·16	0·80
1927	1,800,300	1,105	296	1,401	0·61	0·16	0·77
1928	1,811,000	1,066	287	1,353	0·58	0·15	0·74
1929	1,811,700	1,102	279	1,381	0·60	0·15	0·67
1930	1,806,960	1,046	253	1,299	0·57	0·14	0·71
1931	1,804,400	1,021	266	1,287	0·56	0·14	0·71
1932	1,802,700	975	238	1,213	0·54	0·13	0·67
1933	1,802,730*	1,010	232	1,242	0·55	0·12	0·68
1934	1,807,090*	848	231	1,079	0·46	0·12	0·59
1935	1,821,100	855	189	1,044	0·46	0·10	0·57
1936	1,842,900	856	192	1,048	0·46	0·10	0·56

* Consequent on the alteration of boundaries, the death-rates have been calculated on the following adjusted populations :—1933, 1,807,800 ; 1934, 1,809,597.

In Appendix I are given the tuberculosis deaths and death-rates in the urban and rural sanitary districts in the Administrative County, and in the dispensary areas.

DEATHS FROM PULMONARY TUBERCULOSIS.

The following Table 3 shows the deaths recorded from pulmonary tuberculosis in 1936 and the preceding 15 years analysed according to sex and age :—

Period	Estimated sex population	Pulmonary deaths in various age-groups									Death-rate per 1,000 of sex population
		0 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	Total	
<i>Males.</i>											
1921–25 (average)	841,030	9	15	120	131	151	153	83	26	688	0·81
1926–30 (average)	856,920	4	9	107	111	133	130	79	27	600	0·70
1931–35 (average)	859,880	3	6	78	106	105	120	89	29	536	0·62
1936	875,838	3	5	70	96	112	106	85	35	512	0·58
<i>Females.</i>											
1921–25 (average)	929,614	8	26	172	145	104	69	37	17	578	0·62
1926–30 (average)	946,771	4	18	155	133	81	49	37	18	495	0·52
1931–35 (average)	949,240	2	13	118	114	72	41	31	15	406	0·42
1936	967,062	1	9	97	95	57	32	26	27	344	0·35

DEATHS FROM NON-PULMONARY TUBERCULOSIS.

The mortality from non-pulmonary tuberculosis in 1936 is greatest among young children aged 0–5, followed by the age-groups 15–25 and 5–15. The actual numbers of children dying each year from this form of the disease have greatly diminished. This decline is due to segregation and supervision of the adult pulmonary cases, social measures, the safeguarding of the milk supply, and the successful modern methods of treatment of children with non-pulmonary disease.

The classification of the deaths in 1936 from non-pulmonary tuberculosis, according to part affected, is as follows :—Vertebral column, 22 ; other bones and joints, 15 ; intestines and peritoneum, 29 ; central nervous system, 73 ; disseminated, 27 ; genito-urinary, 11 ; lymphatic system, 8 ; skin and subcutaneous tissue, 6 ; adrenals, 1 ; total 192 (adults : males 53, females 56 ; children : males 46, females 37).

THE RELATION OF TUBERCULOSIS DEATHS TO DEATHS FROM ALL CAUSES.

The following Table 4 shows for the sample years 1921, 1926, 1931, and 1936 the deaths in the Administrative County from all causes and from tuberculosis. From these figures the percentage of deaths from tuberculosis to deaths from all causes has been calculated for males and females. The general death-rate has remained almost stationary but the tuberculosis death-rate has declined, and the sample years show clearly that tuberculosis is claiming a smaller proportion of deaths from all causes.

Year	Deaths from ALL CAUSES			Deaths from TUBERCULOSIS (all forms).			Percentage of deaths from tuberculosis to deaths from all causes.			GENERAL death-rate per 1,000 of population	TUBERCULOSIS death-rate per 1,000 of population
	Males	Females	Total	Males	Females	Total	Males	Females	M. & F.		
1921	10,874	10,708	21,582	888	789	1,677	8·16	7·36	7·77	12·27	0·95
1926	10,858	10,595	21,453	794	650	1,444	7·31	6·13	6·73	11·99	0·80
1931	11,505	11,707	23,212	749	538	1,287	6·51	4·59	5·54	12·86	0·71
1936	12,022	11,662	23,684	611	437	1,048	5·08	3·74	4·42	12·85	0·56

II.—TUBERCULOSIS CONTROL.*

The causes of tuberculosis are so varied, its various forms legion, its effects so serious and widespread that it is always very difficult to see the problem whole. I intend to discuss some practical measures for its prevention and treatment which have been tried out now in Lancashire for twenty-five years.

We started with practically a virgin field. We had not, as regards the public health services, a single bed, dispensary, nurse, hospital or doctor. We were in much the same position as parts of the Empire may be to-day. What then did we *do*? We built up our scheme on this foundation: FIND, ISOLATE, EDUCATE AND TREAT THE ADULT POSITIVE CASE.

All schemes dealing with the control of tuberculosis endeavour to combine prevention with treatment. It is this which at one and the same time makes the problem so difficult and so interesting. If the measures taken over-emphasise treatment, as is often the case, we shall have a poor scheme and faulty control. The importance of prevention is seen when we realise that some 60 per cent. of adult *pulmonary* cases of tuberculosis die within five years of coming to our notice.

To come then to our text: How shall we “*Find, Isolate, Educate and Treat the Adult Positive Case*”?

FIND.

First as to *Find*. The means to be employed here will be the well-trying ones of notification, and active co-operation between family doctor and whole-time municipal or state doctor. This co-operation is of primary importance. It is possible to measure, in England at any rate, the degree of this co-operation not by the notification of cases but by the number of persons sent to the official doctor—called the tuberculosis officer in this country—*before* notification for an opinion as to diagnosis. In Lancashire we have 92 per cent. of all our new cases dealt with thus.

To get a high degree of co-operation between family doctor and official doctor, certain things are necessary:

(1) A real expert to be consulted; a poorly-paid, poorly-qualified tuberculosis officer is no good.

(2) The community must provide him with efficient tools and laboratory facilities. For example, diagnosis can seldom be complete

* Paper read by Dr. G. Lissant Cox at the Empire Conference on the Care and After-Care of the Tuberculous held in London, on 4th May, 1937.

without the use of x-rays ; they are every bit wanted as much as the thermometer and stethoscope. Modern surgical treatment for pulmonary disease cannot be given without their aid.

(3) There is for the expert the thorny question of hospital beds. I hold very strongly that no doctor can fill his rôle as a consultant if he has no hospital beds under his control. To do this, to combine what may be called the preventive or dispensary unit with the treatment or institutional unit, we have split up our Administrative County of a million acres and nearly two million population into areas, each with its sanatorium-hospital and each managed by a team of doctors. We have tried, in short, to combine the dispensary side of tuberculosis work with the institutional side, a matter in my opinion of great importance if we are to see the problem whole and so hope to control it in the best possible way. Unfortunately we still find, a relic I suppose of the application of the sanatorium principle by Walther in the Black Forest, the erroneous belief that all a county or province needs to control tuberculosis is the erection of a sanatorium in some absurdly isolated spot. Finally, the combination of the dispensary and institutional units under one tuberculosis officer which we have found so efficacious in Lancashire might be equally if not more useful in big sparsely populated parts of the Empire.

ISOLATION.

Now as to *Isolation* of the adult positive case. We have always believed, and still do, in the isolation of the positive case, and from the beginning made provision to keep infective patients in hospital as long as they would stay. To do this we find, with a population of 1,821,100 and an incidence rate of 1·12 per 1,000 (pulmonary 0·73, non-pulmonary 0·39), we require 763 beds for adults and 194 beds for children (pulmonary 680, non-pulmonary 277).

At any one time we have in Lancashire 15 per cent. of the adult pulmonary patients in sanatoria or hospitals—there undergoing treatment or isolation or both. Taking separately cases classified as “T.B. plus” we have correspondingly 23 per cent. in institutions. The 77 per cent. at home include cases which have ceased to be positive and most of them have satisfactory homes.

The number of deaths from pulmonary tuberculosis in our sanatoria and hospitals and in Poor Law institutions is 288 per annum ; this is 33 per cent. of the total pulmonary deaths. It is usual on sentimental grounds to let advanced cases return home shortly before death ; only the patients with very bad home circumstances are retained until death.

Our number of deaths from pulmonary tuberculosis per annum is at present 855. Twenty-five years ago it was 1,528. We have 680 beds, which is just about enough for 855 pulmonary deaths. Considering that many deaths take place in mental and public assistance hospitals, we may say that one sanatorium-hospital bed per pulmonary death will give a fairly good control as far as hospitalisation of the patient is concerned.

I cannot, of course, leave the factor of isolation without referring briefly to environment. A good environment is of great importance as a factor helping to further the *prevention* of tuberculosis. The most striking and specialised combination of a very good environment with isolation of selected patients is the village settlement. The settlement for Lancashire patients is the Barrowmore Tuberculosis Sanatorium and Settlement.

EDUCATION.

Pulmonary tuberculosis is a very insidious disease in its onset and there is great fear of it in the minds of the public. It is by education that this fear can be reduced.

All schools ought to be open-air schools; all children should be taught hygiene more thoroughly than at present. The tuberculosis medical service tries to play its part in the education of the adult in the hospital and in the sanatorium; and the tuberculosis health visitors of this country render valuable service in educating the adult in the home. As evidence of the value of the work of the tuberculosis health visitors in Lancashire, here are some convincing statistics: In 1920, of 1,849 patients considered to be infectious, 209 (or 11·3 per cent.) had not a separate bed; in 1936, the corresponding figures were: 1,872 patients considered to be infectious, and only 76 (or 4·0 per cent.) without a separate bed.

TREATMENT.

This I have placed last in order to emphasise prevention.

We know that treatment for non-pulmonary tuberculosis is successful. About 80 per cent. of patients recover from this form of the disease. But it is not so with the pulmonary form. A recent careful enquiry into our cases showed that of 1,097 definite pulmonary cases, 63·1 per cent. died from tuberculosis within five years. This emphasises once again the importance of prevention. While methods of diagnosis have improved, while new methods of treatment are tried and not without success on individuals, it still remains that the best results in anti-tuberculosis work obtain by detailed, unobtrusive and continually-applied measures for the *prevention* of this disease.

We must of course treat our patients, and, as just indicated, modern—especially surgical—methods of treatment do arrest the disease in a minority of individuals. We do find in Lancashire that there is a definite, though relatively small, improvement in the number of cases of pulmonary tuberculosis which are arrested by such modern methods of treatment as artificial pneumothorax, phrenicectomy and thoracoplasty. In Lancashire we write off our registers as arrested or recovered, on an average of the last five years, 256 pulmonary cases each year.

Treatment has always been free—a policy which I consider has helped to give us our reduction in case incidence and mortality. Only 2·6 per cent. of the total cases notified decline treatment under the County scheme, and the majority of these have special facilities for proper means of prevention and treatment.

COST.

The net cost of the Lancashire tuberculosis scheme for the year ended 31st March, 1937, was £195,000, equal to £107 per 1,000 of the population.

RESULTS.

The following statement shows the decline in pulmonary and non-pulmonary tuberculosis in the Administrative County of Lancaster during the past 21 years :—

Adults and Children.

Death-rate per 1,000 of the population.

					Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1914	...	...	...	...	0·87	0·32	1·19
1935	...	...	...	...	0·46	0·10	0·57
Percentage drop in 21 years	...			...	47%	68%	52%

Case-rate per 1,000 of the population.

					Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1914	...	...	...	...	1·61	0·65	2·27
1935	...	...	...	...	0·71	0·36	1·08
Percentage drop in 21 years	...			...	55%	44%	52%

Dealing with children under 15 years, the following statement shows the decline which has taken place :—

Death-rate per 1,000 of child population.

					Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1914	...	...	...	...	0·26	0·77	1·04
1935	...	...	...	...	0·04	0·20	0·24
Percentage drop in 21 years	...			...	84%	74%	76%

					<i>Case-rate per 1,000 of child population.</i>		
					Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1914	...	...	...	...	0·90	1·34	2·25
1935	...	...	...	...	0·14	0·87	1·02
Percentage drop in 21 years ...					84%	35%	54%

We have built up a scheme for the control of tuberculosis on the foundation of "Find, Isolate, Educate and Treat the Adult Positive Case." It is to be expected that an efficient scheme will produce good results, and we in Lancashire have not been disappointed in this respect. From 1914 to 1935, as the table above shows, the death-rate from pulmonary tuberculosis in the Administrative County declined from 0·87 to 0·46 per 1,000 of the population, a reduction of 47 per cent. In 1914, non-pulmonary tuberculosis was responsible for a death-rate of 0·32 per 1,000 of the population, and in 1935 the rate had fallen to 0·10, a reduction of 68 per cent. The number of new cases also has steadily declined: each year since 1924 has shown a reduction in the number of pulmonary cases, and comparing 1924 with 1935 there has been a drop of 34 per cent.; the number of non-pulmonary cases has fallen 40 per cent. since 1924.

III.—THE PRACTITIONER AND THE DISPENSARY.

BY G. FLETCHER, M.D., M.R.C.P., D.P.H.

*Consultant Tuberculosis Officer for Dispensary Area No. 3,
and Medical Superintendent of Wolstenholme Pulmonary Hospital.*

The last twenty-five years have multiplied and developed the activities of the tuberculosis dispensary but its chief function—diagnosis—still remains; and the tuberculosis officer, in his efforts to secure early diagnosis, depends upon the general practitioner. In Lancashire we are fortunate, as some 92 per cent. of all new tuberculous cases are referred to the dispensary for opinion before statutory notification. It is, indeed, now true that delay in diagnosis, when it occurs, is more often due to failure on the part of the patient to seek early advice than to failure on the part of the practitioner to recognise the beginnings of the disease. The insidious onset and the fear of loss of work are, of course, the main reasons for delay on the part of the patient.

But the results of modern treatment prove that the earlier the disease is treated the better are the final results. Thus, the need for early diagnosis is even more important now than in the past.

First evidences of pulmonary tuberculosis. These usually appear in the form of symptoms experienced by the patient. It is his symptoms that lead him to consult his medical attendant, and the practitioner who is most alive to the import of them is the first to suspect the presence of the disease. While the onset of phthisis may present many and varied symptoms, the mere *duration* of them is a matter of first importance. If for several weeks a patient has suffered from symptoms—pulmonary, constitutional, or dyspeptic—it is always wise to raise the question of tubercle.

The disease varies in its mode of onset. It may appear so insidiously that the patient cannot tell us when he first began to ail. He complains of a lassitude which varies from day to day and which he is at a loss to explain. Accompanying this, there is some loss of weight and appetite. He may have noticed no cough but only some “clearing of the throat” in the morning, and his voice may have altered somewhat in character. In young females, amenorrhœa is often a prominent and significant symptom. Such a history, in the absence of any obvious cause, demands an investigation of the lungs.

Usually the pulmonary symptoms are more pronounced and the patient complains of "a cold that will not clear up," or of a series of colds, or of an attack of "influenza." He states that the illness has left him "run down." Laryngeal symptoms may be present in some degree. This is probably the commonest history in early cases.

A definite hæmoptysis is sometimes the first warning of illness and to disregard it is a very grave error which even now is not unknown. It should be noted that the absence of physical signs after even a considerable bleeding by no means excludes a diagnosis of phthisis.

An attack of pleurisy—especially pleurisy with effusion in a young subject—is usually a manifestation of tuberculosis, and in the absence of any other cause should be treated as such. Not infrequently these patients appear in later years with intra-pulmonary disease.

In every case where the presence of tuberculosis is in question a careful record of the temperature and pulse rate should be taken. An obscure illness with persistent pyrexia or tachycardia often turns out to be the onset of phthisis.

The personal history of the patient should be noted as it may contain a record of an attack of pleurisy, a "burst blood-vessel in the throat," a long influenza-like illness, or former disease of the glands or bones.

The family history may reveal a hereditary tendency to the disease or a domestic source of infection. In dispensary work it sometimes happens that the notification of a death from meningitis leads to the discovery of an active pulmonary case in the household.

Errors in diagnosis. The most serious error of all is a diagnosis of pulmonary tuberculosis when no such disease is present for it may entail upon the patient several years of semi-crippled life, a serious loss of earning power, and the stigma that often attaches to the disease. No patient should be notified as tuberculous except on thoroughly valid grounds. Too much reliance should not be placed upon minor disparities which physical examination may appear to reveal between the two apices. If the least doubt exists the patient should be submitted to a fuller investigation, including an x-ray examination. It is generally true to say that when the symptoms of a phthisical patient are marked enough to lead him to consult his doctor the skiagram will demonstrate the disease in the lungs. On the other hand, a normal chest skiagram is of the greatest value in helping us to decide that

tubercle is absent. And so one of the most useful functions of a dispensary is that of preventing non-tuberculous cases from being labelled consumptive.

It is not uncommon for tubercle in its early stages to be concealed under some other diagnosis. It may be pronounced to be debility, qualified perhaps as influenzal, anæmic, or gastric. A catarrhal onset may be regarded as a bad cold, bronchitis, or influenza. A hæmoptysis may be referred to the throat or stomach, while pleurisy may be called rheumatism or pleurodynia. In particular one should beware of such conjoint diagnoses as bronchitis and gastritis, bronchitis and anæmia, bronchitis and pleurisy, influenza and pleurisy, influenza and gastritis, and the like. Such conjunctions of names often serve to obscure the true condition.

The converse error is that of diagnosing phthisis when the patient is really suffering from some other disease. Bronchitis is sometimes regarded as tuberculosis, though the two conditions have many points of difference. In the comparatively few cases in which tubercle develops in a bronchitic chest, the constitutional symptoms, the persistent pyrexia, or the prolongation of a winter bronchitis into the summer months, should raise our suspicions. A damaged lung in children who have suffered from one or more attacks of pneumonia or "congestion of the lungs" may lead to a diagnosis of phthisis, though such cases rarely develop tubercle. Where bronchiectasis has become established in a child or an adult the differentiation may call for fuller investigation. This is particularly the case in the dry form of the disease in which the classical symptoms and signs of bronchiectasis are absent and the only complaint is that of occasional and perhaps considerable hæmoptysis. The use of lipiodol may be needed to demonstrate the diagnosis on the x-ray film.

In elderly patients cancer of the lung, especially if it is accompanied by pleural effusion may closely simulate tuberculosis, and several weeks of observation may be needed to elucidate the diagnosis. In this connection it may be stated that experience at a tuberculosis dispensary goes to support the belief that lung cancer has distinctly increased within the past twenty years. Mediastinal tumour or aortic aneurysm may also give rise to diagnostic difficulties. Hæmoptysis due to heart disease can usually be recognised on clinical examination, but mitral stenosis may resemble phthisis very closely indeed, especially if the murmur is not well developed. The skiagram of such a case usually shows some abnormality of the cardiac contour as well as definite evidence of pulmonary congestion. The co-existence of mitral stenosis and pulmonary tuberculosis is rare but not unknown.

Examination of the sputum. In all doubtful cases examination of the sputum, if any, is essential, and repeated examinations may often be necessary. *One negative result cannot be held to exclude tubercle, an error which is still sometimes made.*

The work of the dispensary. The new cases examined at the dispensary come from several sources. They may be :

- (1) Referred for investigation by the medical attendant.
- (2) Notified as suffering from tuberculosis.
- (3) Seen as contacts.
- (4) Transferred from some other authority.

The work of the dispensary is to select the tuberculous patients and arrange for their treatment. In obscure cases, it may even be necessary to secure admission to a sanatorium for prolonged observation. Active lung cases are usually offered sanatorium treatment, and non-pulmonary cases or patients with lupus are either treated at the dispensary light centre of the area or referred to appropriate orthopædic or other institutions. Contact work is an important function of the dispensary and has its peculiar difficulties. It should be noted that a contact when first examined may reveal no evidences of disease but may re-appear several years later with active signs and symptoms. The family practitioner should therefore pay special attention to those contacts who have ceased to attend the dispensary for observation. The adolescent members of the family should be specially urged to attend for examination, for not infrequently the skiagram will reveal a lung lesion which the stethoscope fails to detect. Indeed, in dealing with cases of phthisis generally, it sometimes happens that a chest which appears normal on careful clinical examination is found to present extensive bilateral disease on the skiagram.

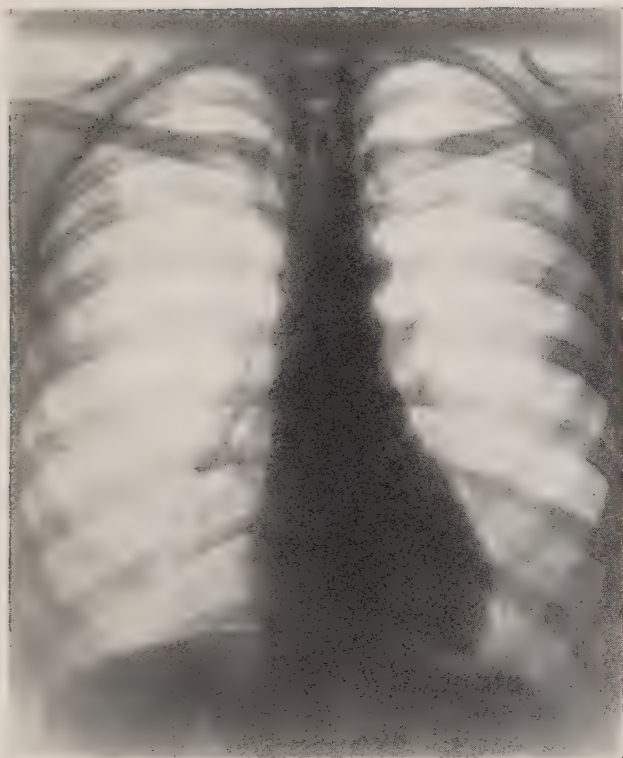
Treatment. The modern treatment of pulmonary tuberculosis may be summed up in one word—rest. Recent operative measures are only expressions of rest in local and surgical terms. It is important, therefore, that the patient should be instructed to rest regularly before, as well as after, sanatorium treatment. To advise him to take plenty of fresh air may lead him to indulge in long walks and thus to prejudice his chances of recovery.

The introduction of artificial pneumothorax treatment—see skiagrams A.11 (*a*), (*b*) and (*c*)—enables one to approach adolescent cases more hopefully than in former years when the prognosis in such patients was almost uniformly bad. Operations on the phrenic nerve (see skiagram A.13), with the object of paralysing the diaphragm

“THE PRACTITIONER AND THE DISPENSARY.”

RIGHT.

LEFT.



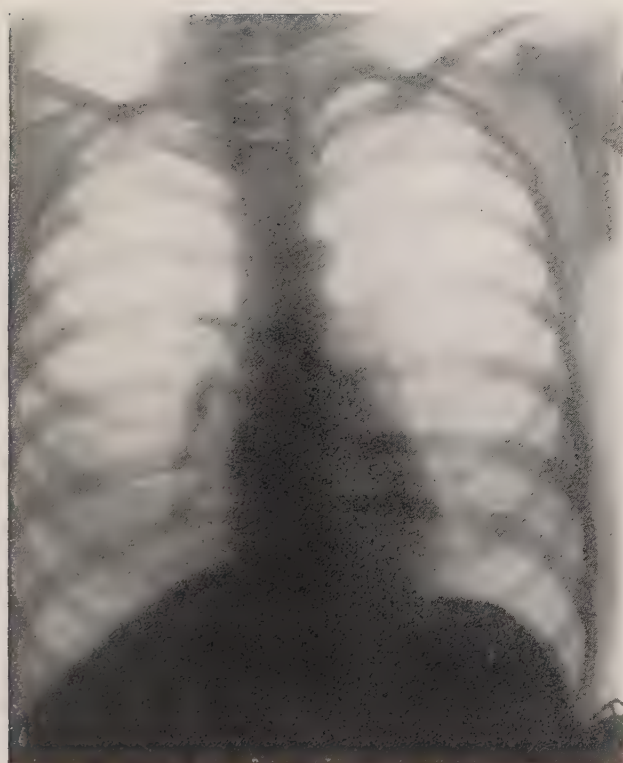
A.1.—Normal chest.

RIGHT.

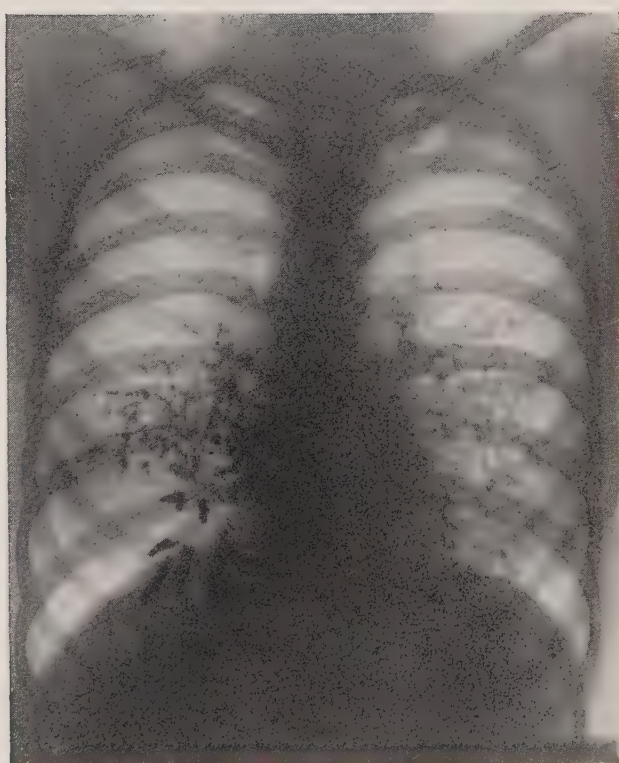
LEFT.



A.2.—Bronchitis.



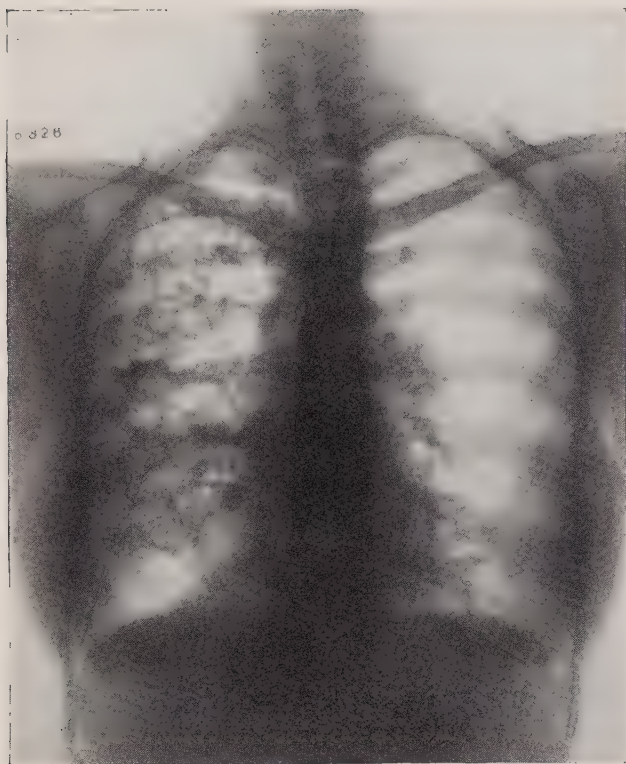
A.3(a).—Dry bronchiectasis.



A.3(b).—Dry bronchiectasis, after lipiodol injection.

RIGHT.

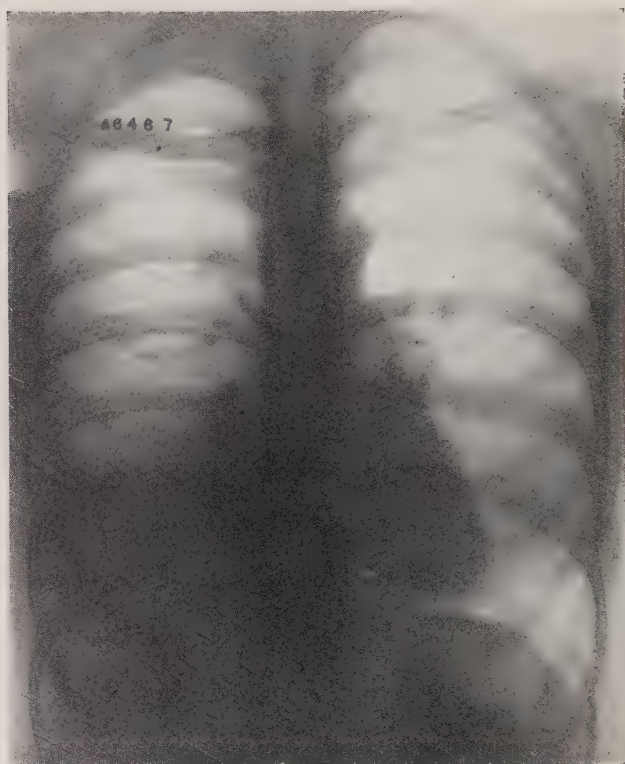
LEFT.



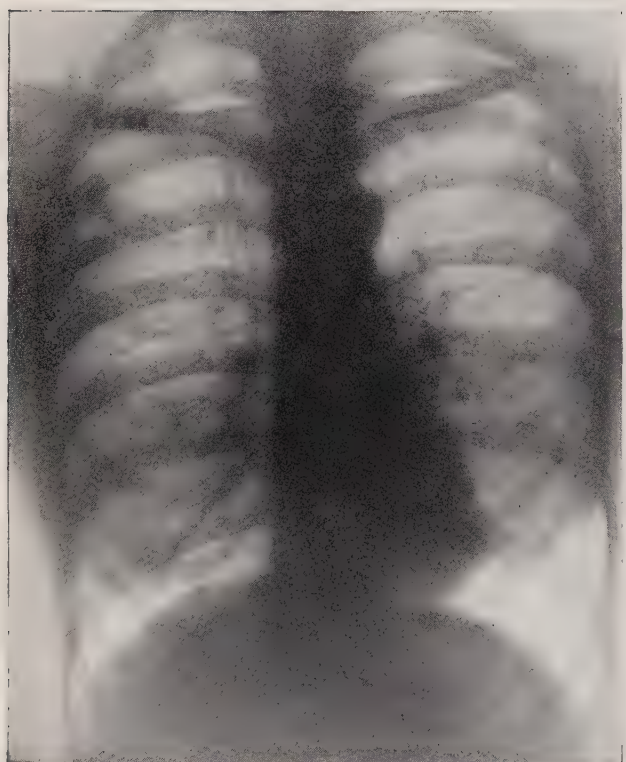
A.4.—Bronchiectasis showing multiple dilatation of the bronchial tubes.

RIGHT.

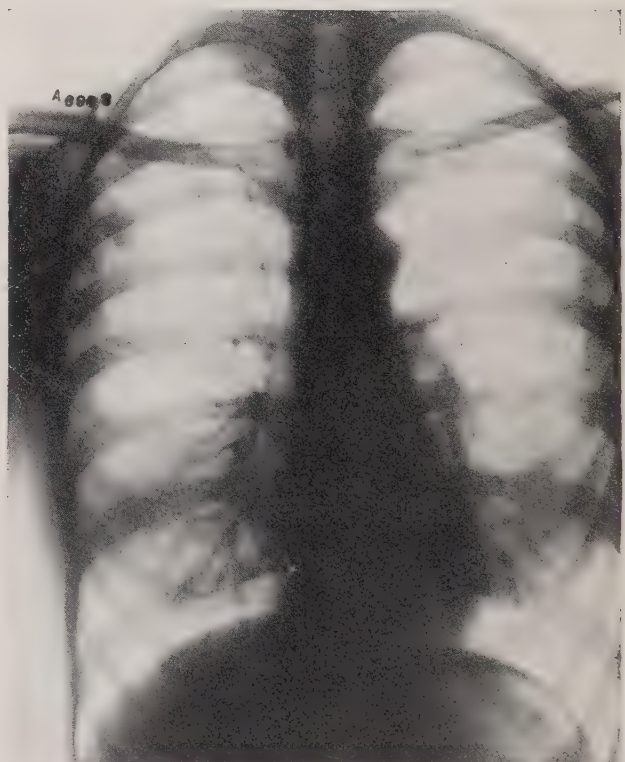
LEFT.



A.5(a).—Pleurisy with effusion.



A.5(b).—Recovery from pleurisy.



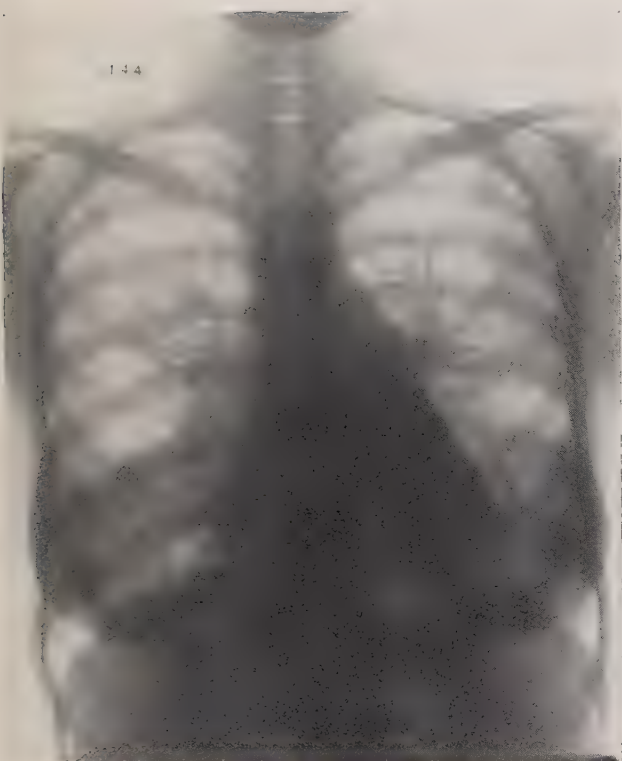
A.5(c).—Development of the intra-pulmonary lesion below and touching right clavicle.

RIGHT.

LEFT.

RIGHT.

LEFT.



A.6.—Mitral stenosis.



A.7.—Aneurysm.



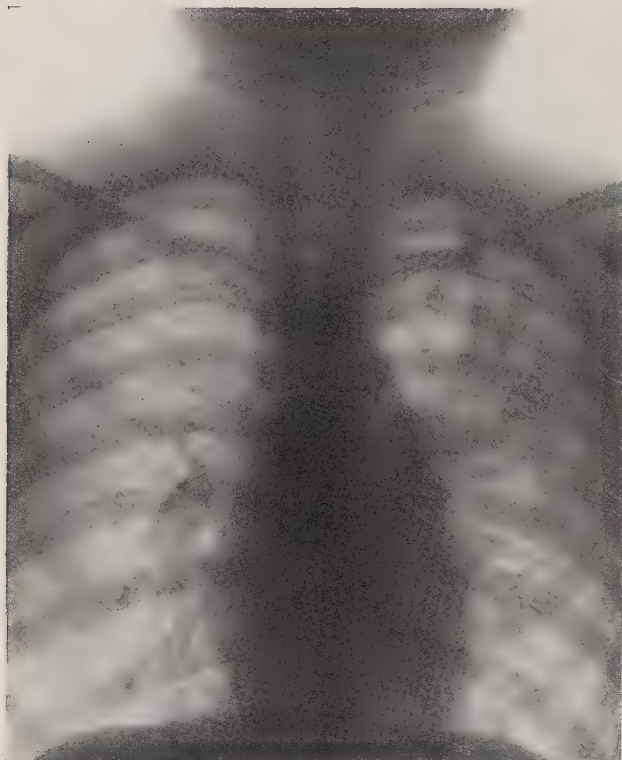
A.8.—Mediastinal tumour.



A.9.—Malignant disease of the lung.

RIGHT.

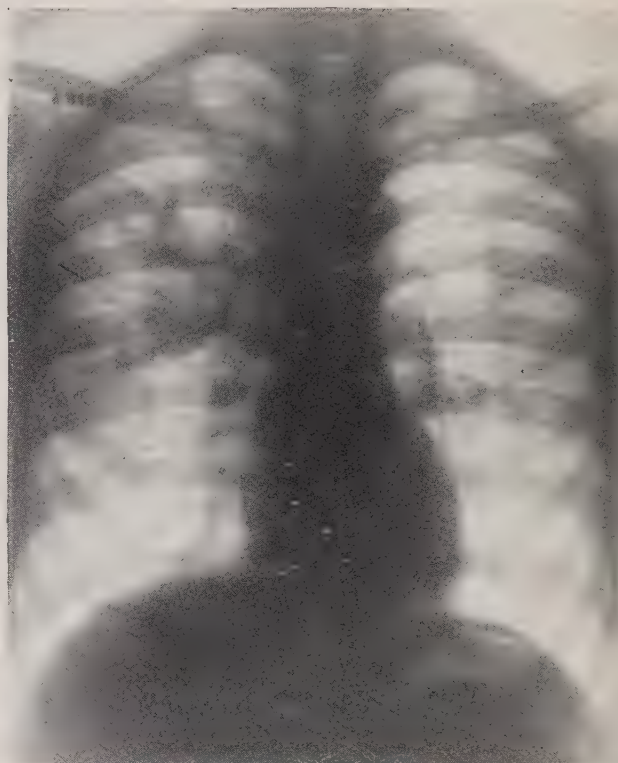
LEFT.



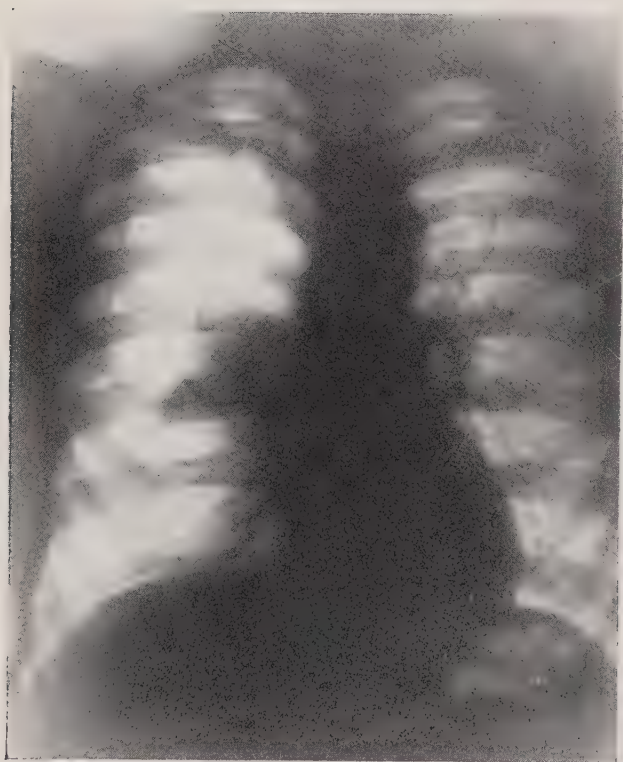
A.10.—Tuberculous disease in a contact. Note lesion in middle zone of left lung.

RIGHT.

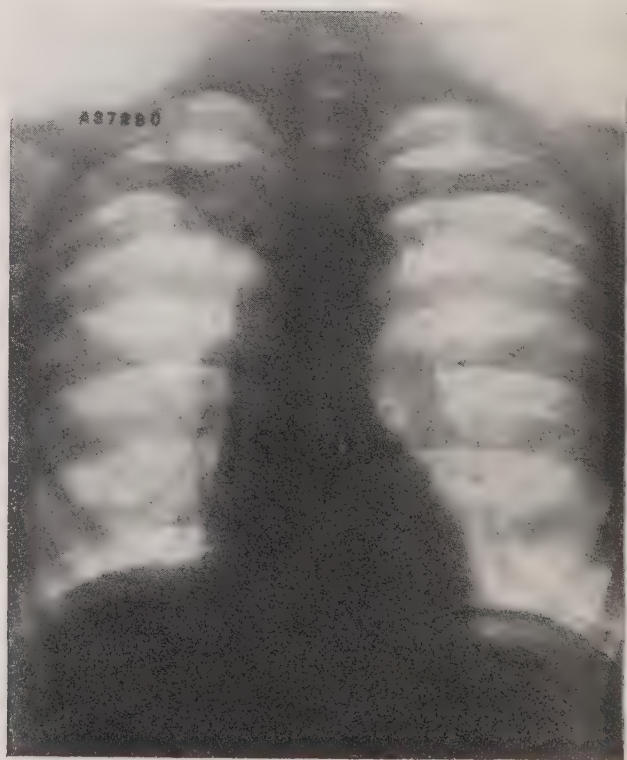
LEFT.



A.11(a).—Before artificial pneumothorax treatment.



A.11(b).—Same patient during artificial pneumothorax treatment (right lung).



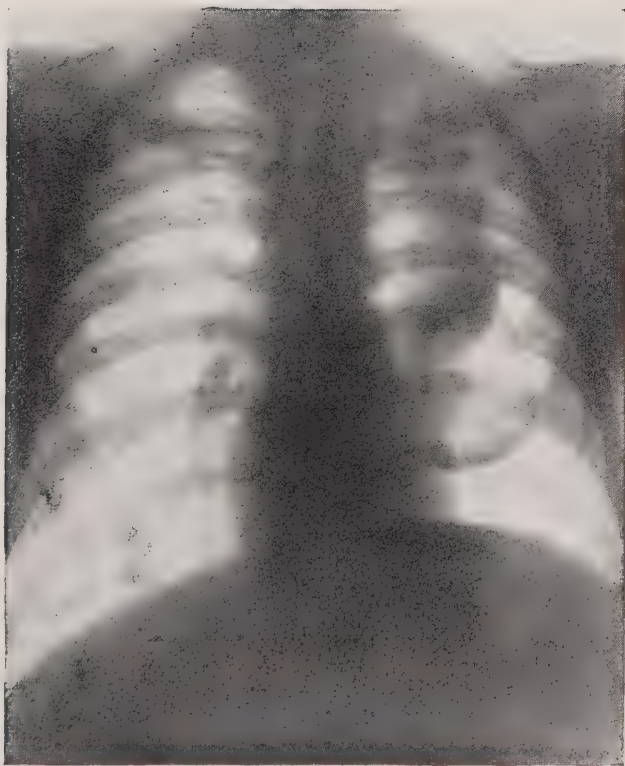
A.11(c).—Same patient after artificial pneumothorax treatment.

RIGHT.

LEFT.



A. 12.—Thoracoplasty.



A. 13.—Phrenic interruption.

on the affected side and thus securing rest for the diseased lung, have won a definite place in the modern treatment of lung tuberculosis. Improvements in technique enable the surgeon to recommend thoracoplasty (see skiagram A.12) in an increasing number of cases which have failed to respond to other measures. In certain cases the injection of gold salts is followed by improvement.

Thus, while we base our hopes of the conquest of tuberculosis on many causes acting in conjunction, it is true to say that modern methods offer increasing chances of recovery to individual patients.

Here inserted are a number of skiagrams illustrating the following conditions :

- A.1. Normal chest.
- A.2. Bronchitis.
- A.3. (a) Dry bronchiectasis.
(b) Dry bronchiectasis after lipiodol injection.
- A.4. Bronchiectasis showing multiple dilatation of bronchial tubes.
- A.5. (a) Pleurisy with effusion.
(b) Recovery from pleurisy.
(c) Development of the intra-pulmonary lesion.
- A.6. Mitral stenosis.
- A.7. Aneurysm.
- A.8. Mediastinal tumour.
- A.9. Malignant disease of the lung.
- A.10. Tuberculous disease in a contact.
- A.11. (a) Before artificial pneumothorax treatment.
(b) During artificial pneumothorax treatment.
(c) After artificial pneumothorax treatment.
- A.12. Thoracoplasty.
- A.13. Phrenic interruption.

Skiagrams of a number of cases presenting interest from the point of view of diagnosis and treatment are contained in the reports of other consultant tuberculosis officers, as per the following references :

Area No. 2.	Pregnancy during treatment	...	...	...	...	page 64
Area No. 4.	Skiagrams of special interest†	...	...	...	...	page 74
High Carley.	Thoracoplasty and phrenic interruption	...	...	...	...	page 88

IV.—HEALING IN PULMONARY TUBERCULOSIS : A RADIOLOGICAL STUDY.

BY GEORGE JESSEL, M.D., D.P.H., A.R.P.S.

*Consultant Tuberculosis Officer for Dispensary Area No. 4,
and Medical Superintendent of Peel Hall Pulmonary Hospital.*

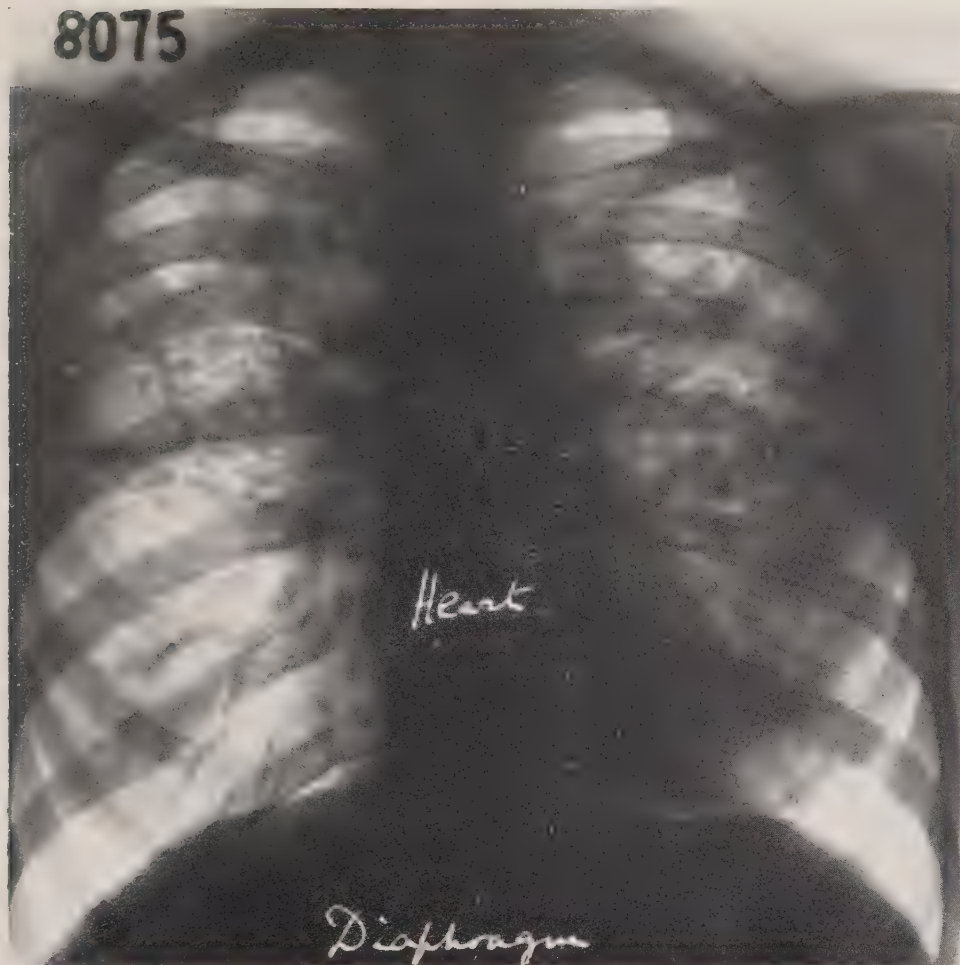
The increasing interest that is being taken in radiology by tuberculosis medical officers and general practitioners renders it desirable that an attempt be made to describe, simply and briefly, some of the appearances met with in chest skiagrams that are usually considered to represent various aspects of the healing process. It is not enough to say that a patient is suffering from tuberculosis ; we need also to note the stage of disease, whether acute or chronic, active or quiescent. Clinicians of experience have long been accustomed to recognise the stigmata of old quiescent lesions, while it is to the pathologist that we owe a description of the various morbid processes met with at different stages. The value of radiology in the living is generally appreciated either as providing confirmation of opinions based on clinical examination, or as differentiating more precisely the nature of the lesions discovered. A study of a number of skiagrams of the same patient, when correlated with clinical findings, is of great value in judging the condition of the disease in various parts of the affected lungs, and in following the progress of quiescence or healing.

It has long been known that the reaction in the lung to the inroads of the tubercle bacillus is : (1) Tubercle formation, (2) softening of the diseased area, (3) excavation, (4) fibrosis or scarring, when healing is beginning to take place, (5) calcification, or deposit of lime salts in a fibrosed area. These may all be found in various parts of the same lung, but it is with fibrosis and calcification that we are now concerned.

Scarring, or fibrous tissue formation, when found on the surface of the body, *e.g.*, in miners who have recovered from various superficial injuries, is familiar to us. We cannot, however, during life, see the scarring of lungs in tuberculosis, and are dependent upon x-ray appearances, which we have learnt to associate with this process.

Tuberculosis is, in many ways, a remarkable disease. Its effects may be minimal and only accidentally discovered as a minute spot of scarring or calcification in one lung ; alternatively, it may attack

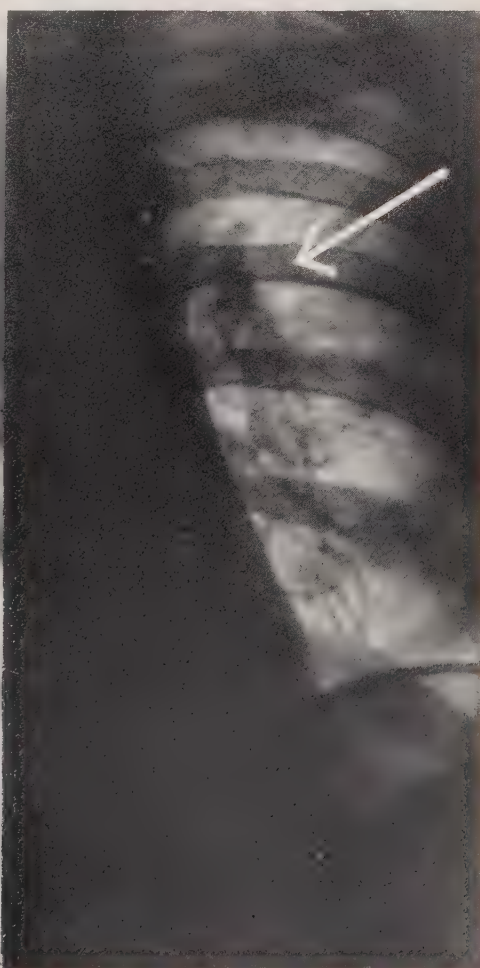
HEALING IN PULMONARY TUBERCULOSIS.



H.1.—E.G., female, aged 16. Typical example of mottling seen in active tuberculosis. Cavity in right lung.



H.2(a).—J.S., male, aged 35. Skiagram taken 26-9-33 shows tuberculous disease of upper and middle zones of left lung. Onset of illness 4-5 weeks previously with cough and sputum (positive). Brother also has tuberculosis.



H.2(b).—Same patient. Skiagram taken 6-5-37 (nearly four years later) shows scarring in upper zone of left lung, with rise of diaphragm after phrenicectomy. No sputum. Fit for work.

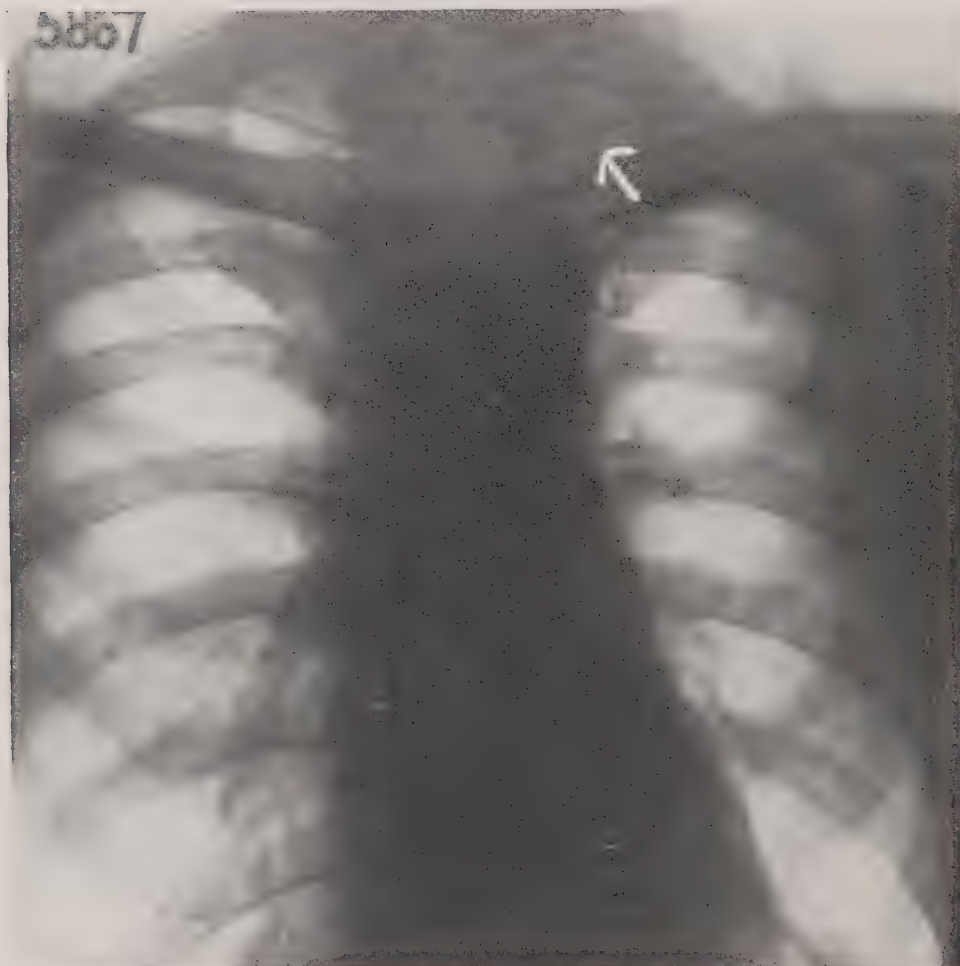
[Skiagrams taken at Eccles Dispensary.]

HEALING IN PULMONARY TUBERCULOSIS—*contd.*



H.3(a).—G.W., female, aged 39. Skiagram taken 16-7-31 shows disease below left clavicle and apex with cavitation. Onset of illness 7-8 months previously. Sputum positive.

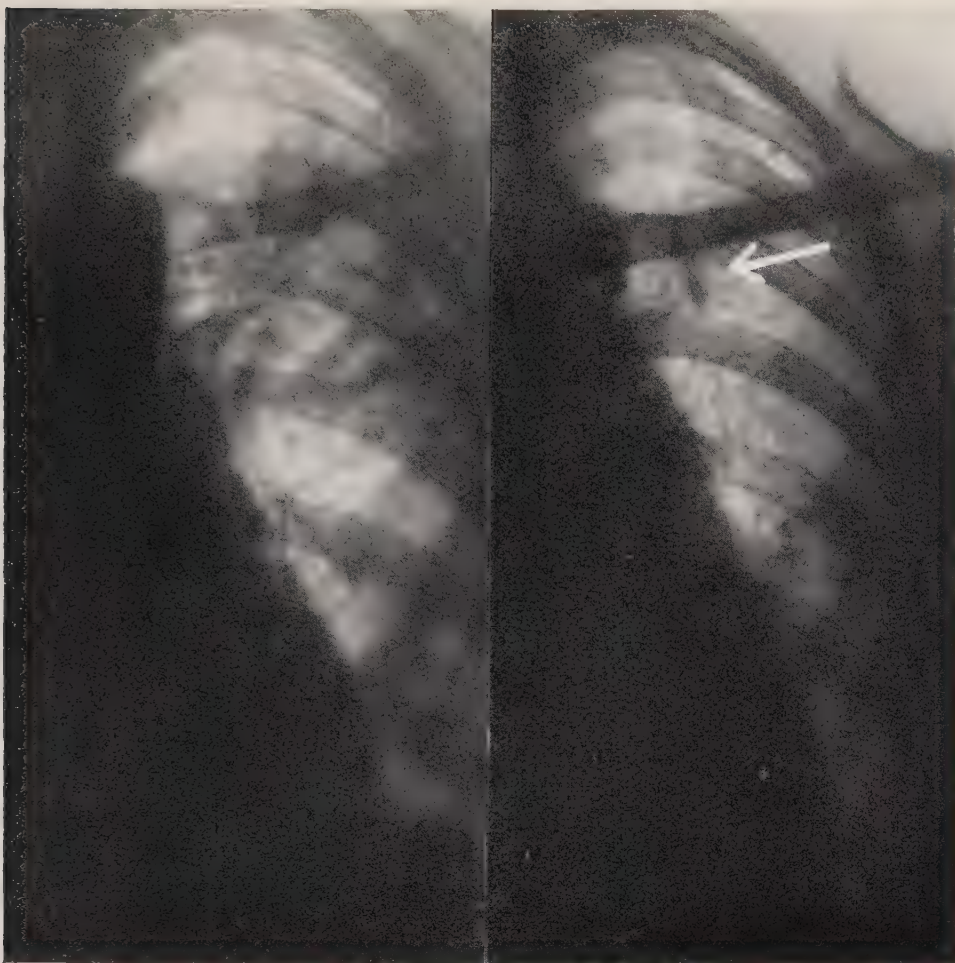
H.3(b).—Same patient. Skiagram taken 9-3-37 (nearly six years later) shows a scar in left upper zone. Sputum negative. Fit for work.



H.4.—E.M., male, aged 54. First seen in 1920. T.B. minus case. Regarded as cured August, 1926. In March, 1931, the physical signs were hollowing above clavicles, and at left apex impaired percussion note with blowing breath sounds.

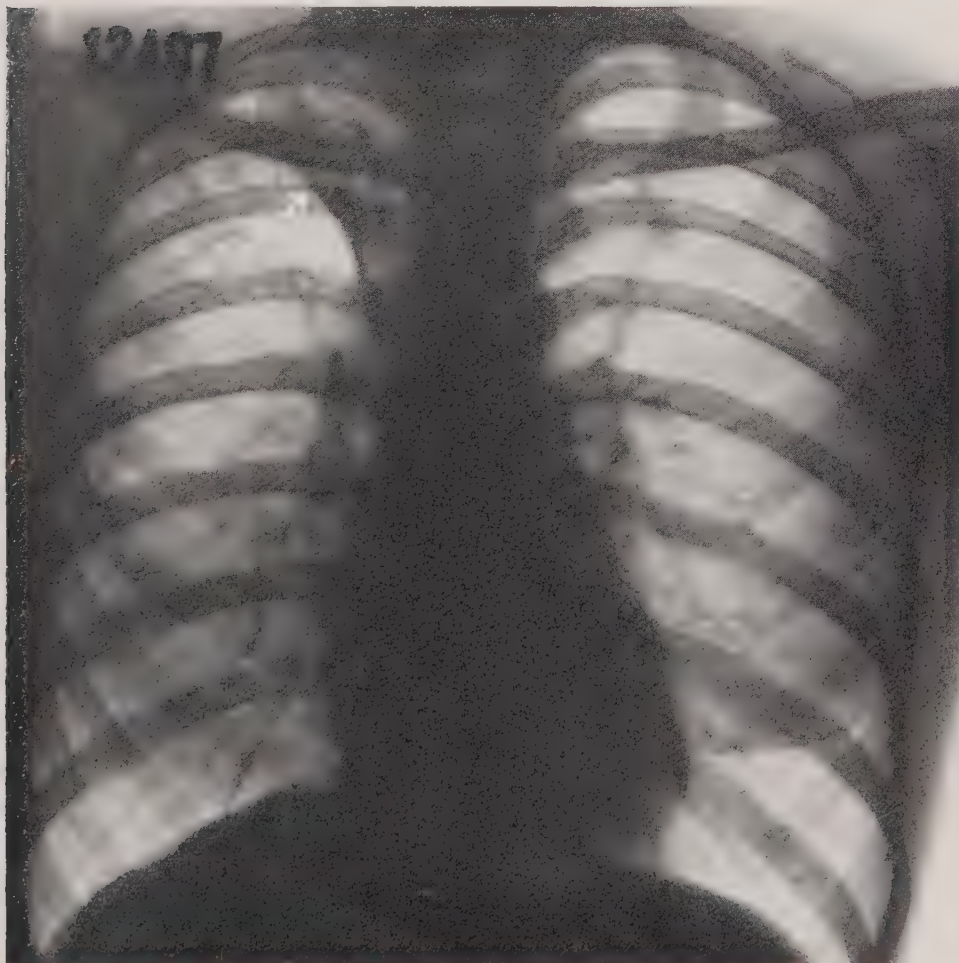
[Skiagrams taken at Eccles Dispensary.]

HEALING IN PULMONARY TUBERCULOSIS—*contd.*



H.5(a).—M.K., female, aged 23. Skiagram taken 19-5-31 shows definite tuberculous disease all zones of left lung. Had influenza 6 weeks earlier, recovery slow and incomplete. Sputum positive.

H.5(b).—Same patient. Skiagram taken 4-5-37 (six years later) shows that the disease in upper and middle zones of left lung has nearly disappeared, leaving some scarring. Heart deviated to left.



H. 6.—A.W., female, aged 30. Had tuberculous glands of neck as a child. Sputum positive in April, 1929, with definite tuberculous disease in right upper zone. Skiagram taken June, 1937, shows scarring at right apex and contraction.

[Skiagrams taken at Eccles Dispensary.]

HEALING IN PULMONARY TUBERCULOSIS—*contd.*



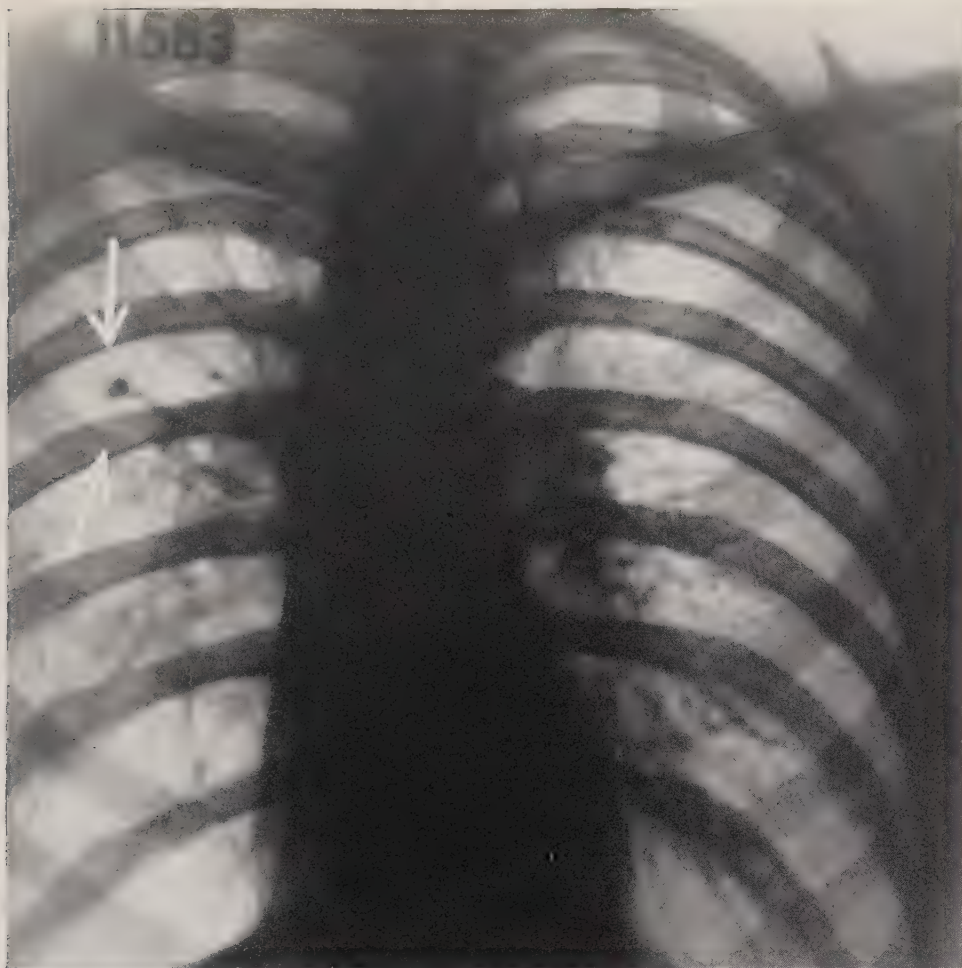
H.7(a).—H.M., male, aged 54. Skiagram taken 3-10-29 shows extensive tuberculous disease over greater part of left lung. Onset of illness one month earlier with hæmoptysis. Sputum positive.



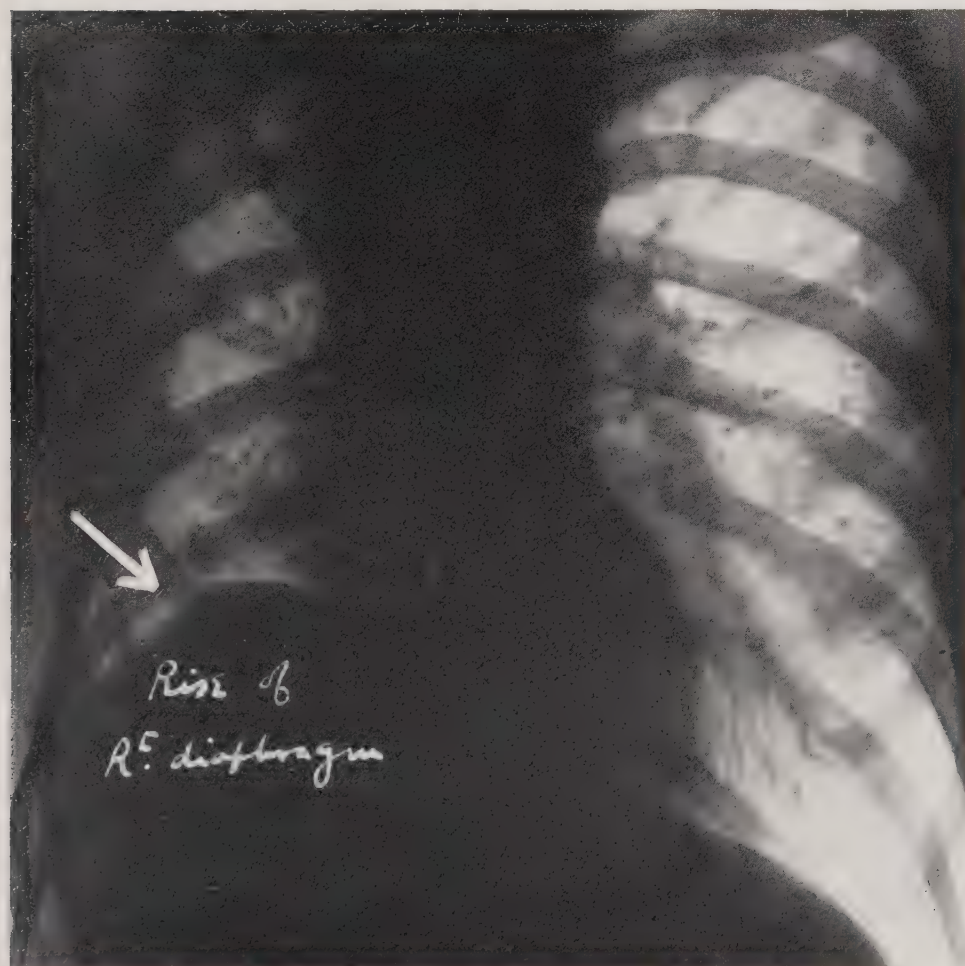
H.7(b).—Same patient. Skiagram taken 26-6-30 shows left lung to be about half collapsed after artificial pneumothorax treatment.



H.7(c).—Same patient. Skiagram taken 8-6-37 shows fibrosis of left lung and slight pleurisy at its base (dark patches). No sputum. Fit for work.



H. 8.—E.J.C., female, aged 29. Skiagram taken 27-10-36 shows deviation of heart to right side with evidence of scar formation and fibrosis in right upper and middle zones. First seen by tuberculosis officer April, 1925. Onset of illness three months earlier; sputum then positive. Now no sputum and fit for work.

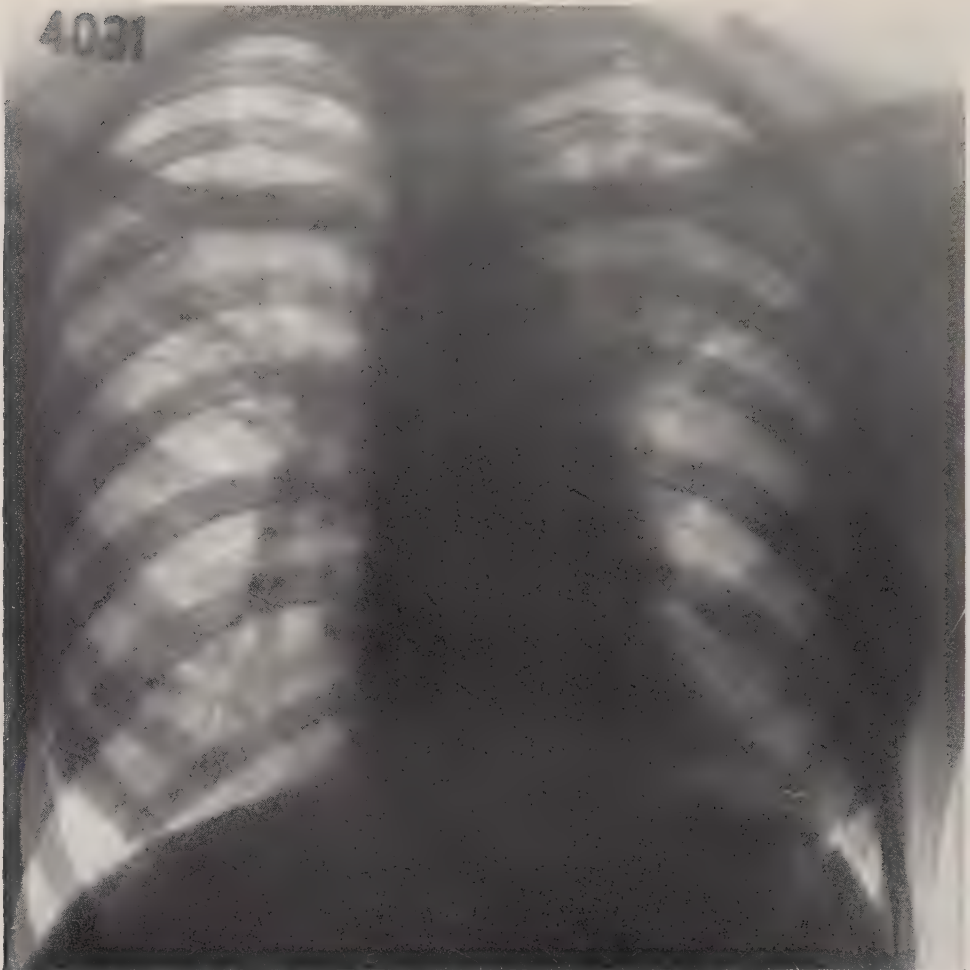


H. 9.—W.K., male, aged 47. Old positive sputum case. The right lung appears much darker than the left; this is due to fibrosis of right lung. Heart pulled to the right and marked rise of diaphragm following phrenicectomy.

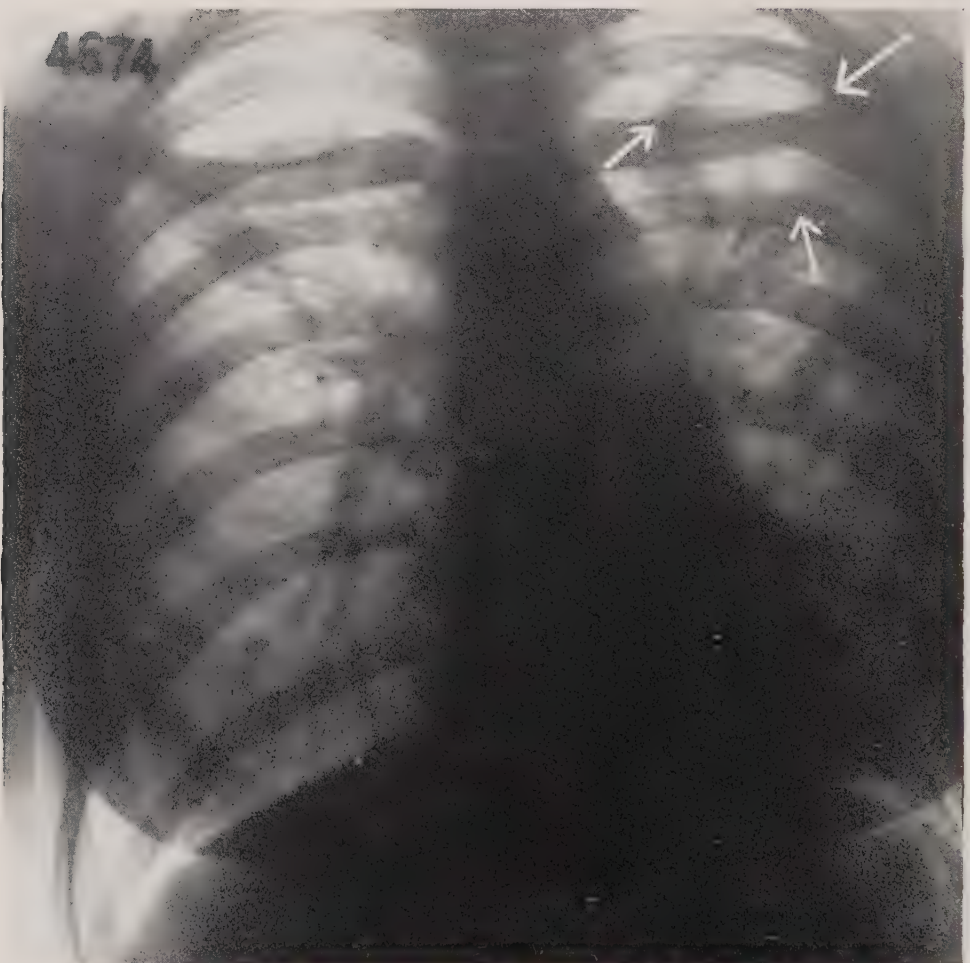
[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.



H. 10(a).—E.S., female, aged 23. Skiagram taken 27-2-30 shows well-marked mottling in both upper zones, especially left, and appearances suggesting small, calcified glands right apex at root of neck.

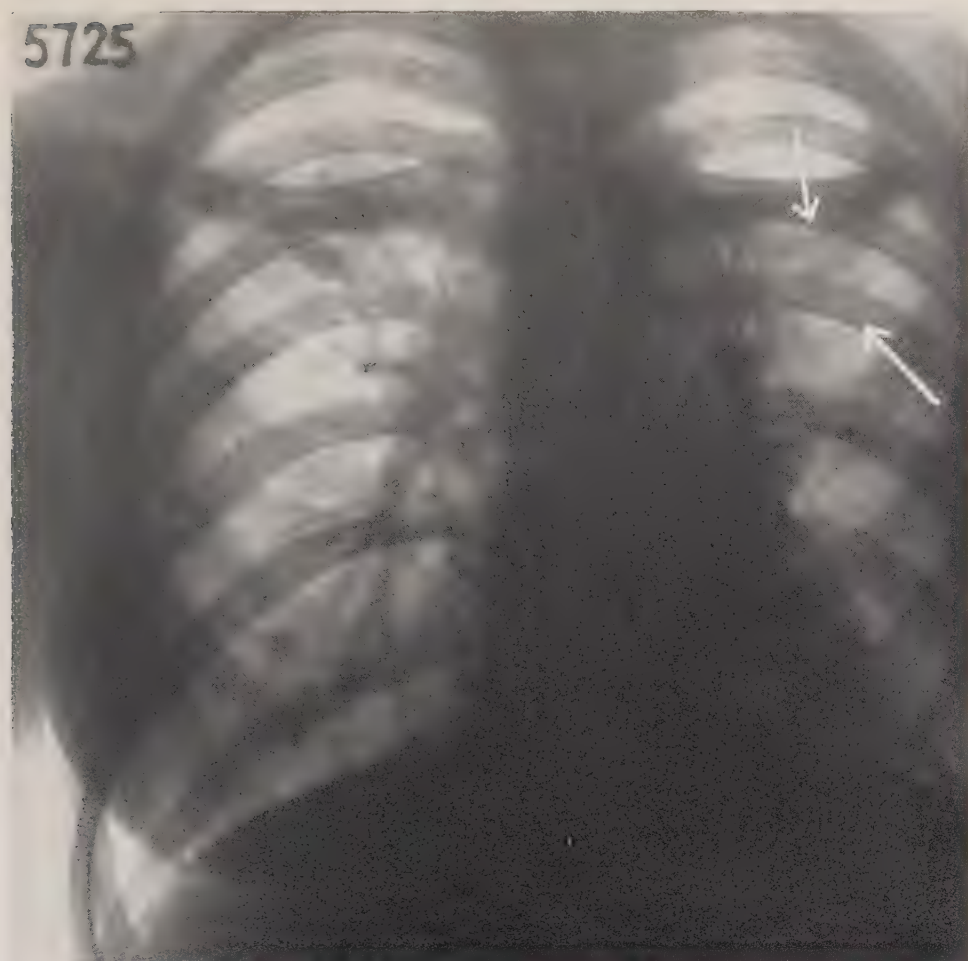


H. 10(b).—Same patient. Skiagram taken 7-11-30 on discharge from hospital shows clearing of the disease in left upper zone suggesting fibrotic change. Arrows point to the outline of a cavity. Heart more deviated to left. Sputum still positive.

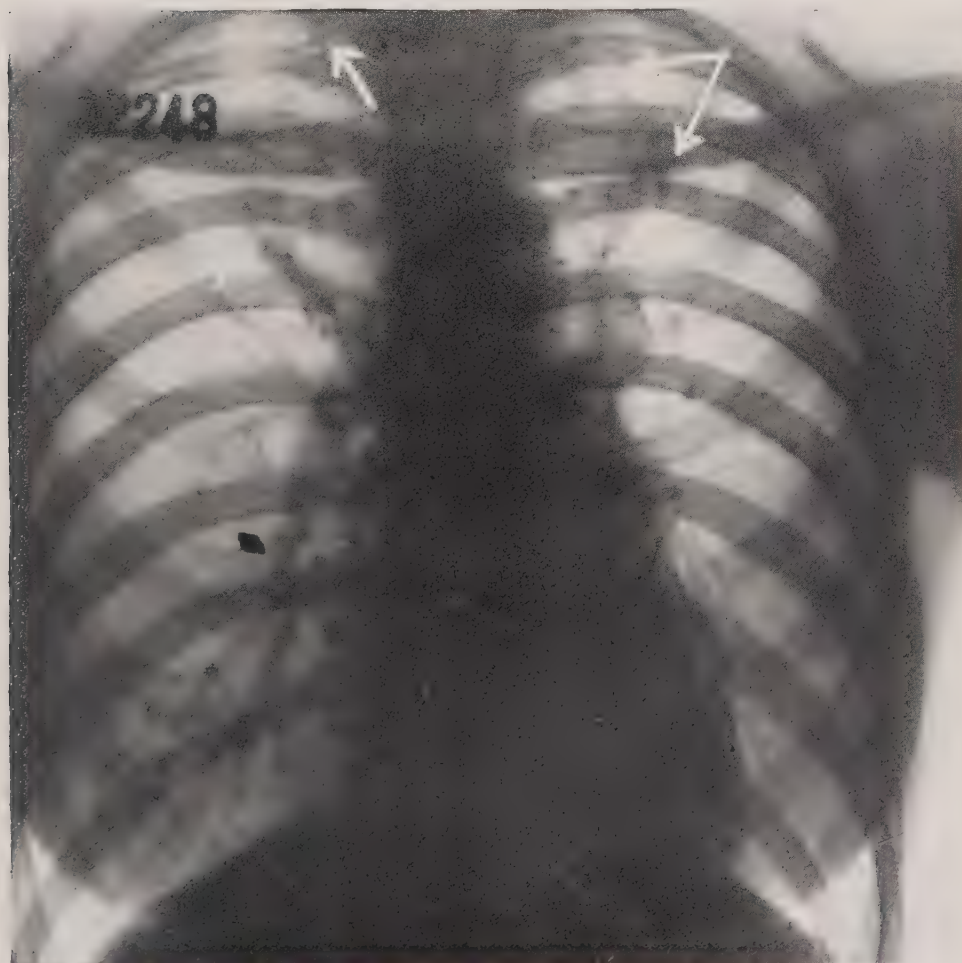
[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.



H. 10(c).—Same patient. Skiagram taken 1-10-31 shows scarring below the clavicle in right lung, and small calcified cervical glands. Also a large cavity at apex of left lung with evidence of fibrosis below. Sputum still positive.

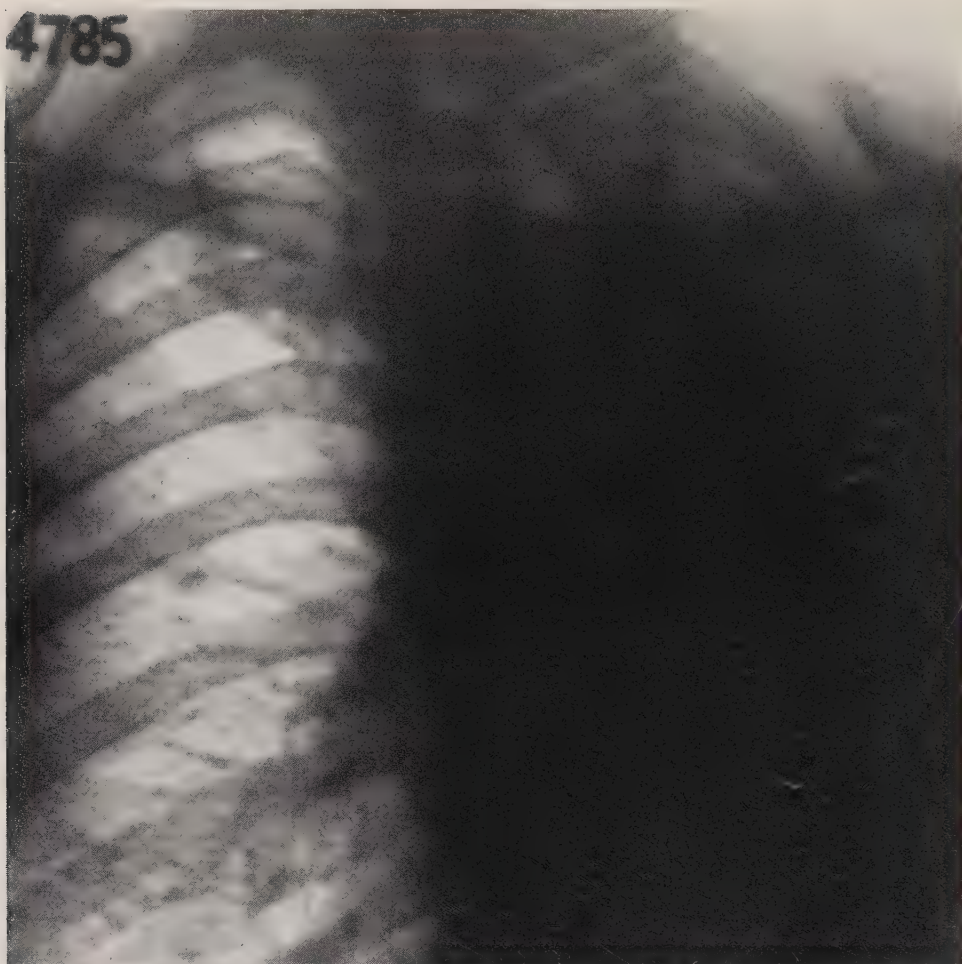


H. 10(d).—Same patient. Skiagram taken 23-4-37 shows process of calcification and scarring to be well established in both upper zones. Sputum negative.

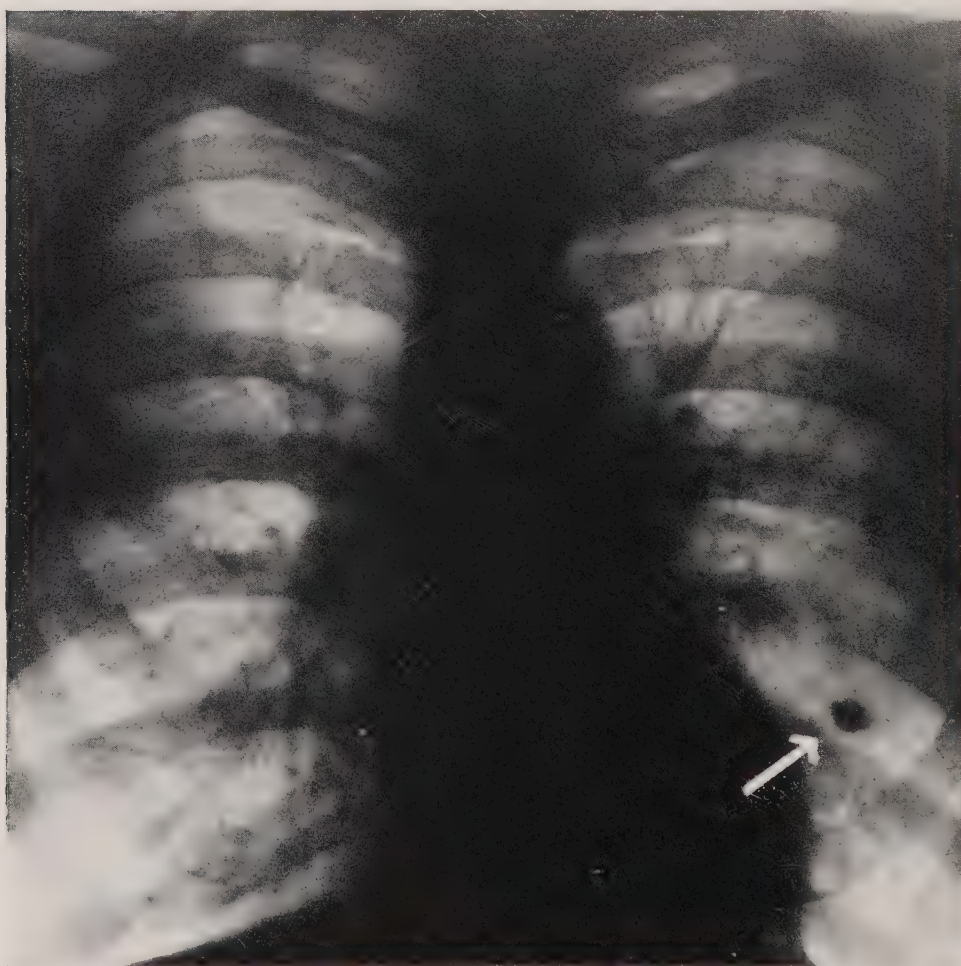
[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.



H.11.—H.B., male, aged 46. Skiagram taken 2-12-30 shows almost the whole of the left lung to be opaque. Deviation of trachea to left is clearly visible. Right lung—in upper and middle zones are a few very small clear-cut opacities suggesting calcified foci. First seen by tuberculosis officer August, 1922. Sputum positive. Condition on 24-6-37 (12 years later)—patient working, sputum nil.



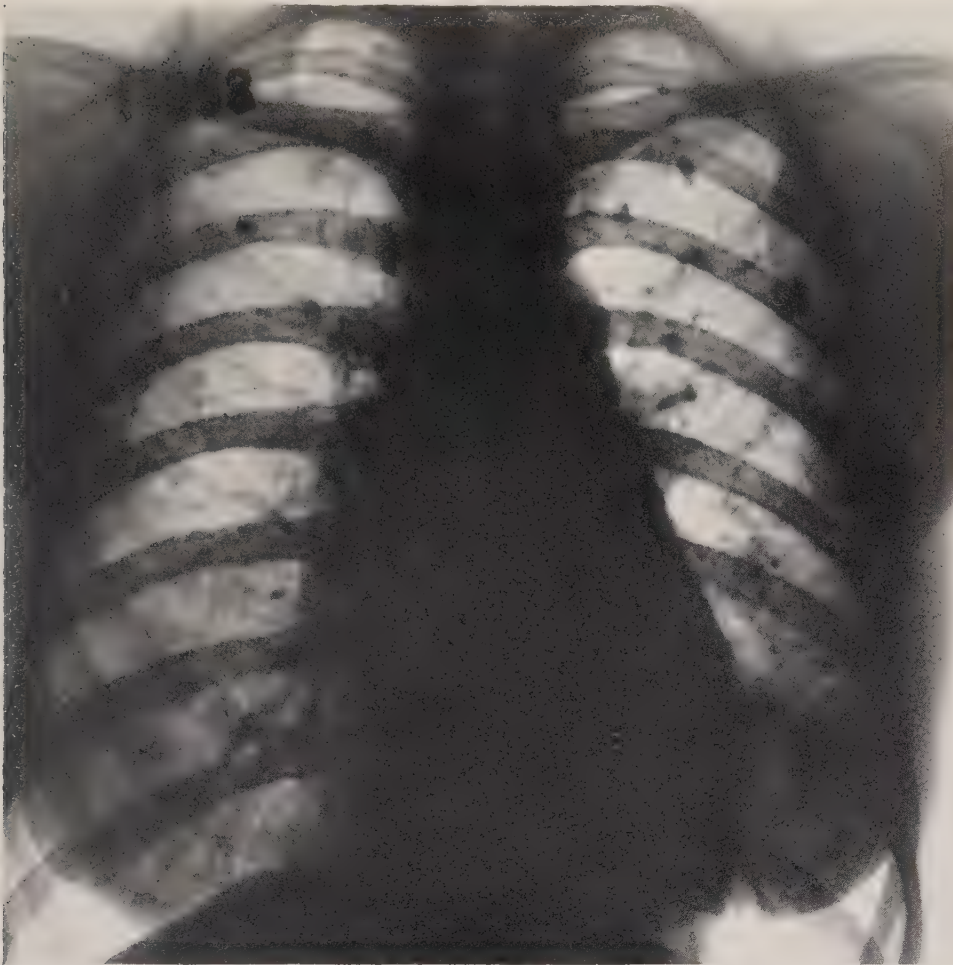
H.12.—L.K., male, aged 52. Skiagram shows a primary focus left lower lobe.

[Skiagrams taken at Eccles Dispensary.]

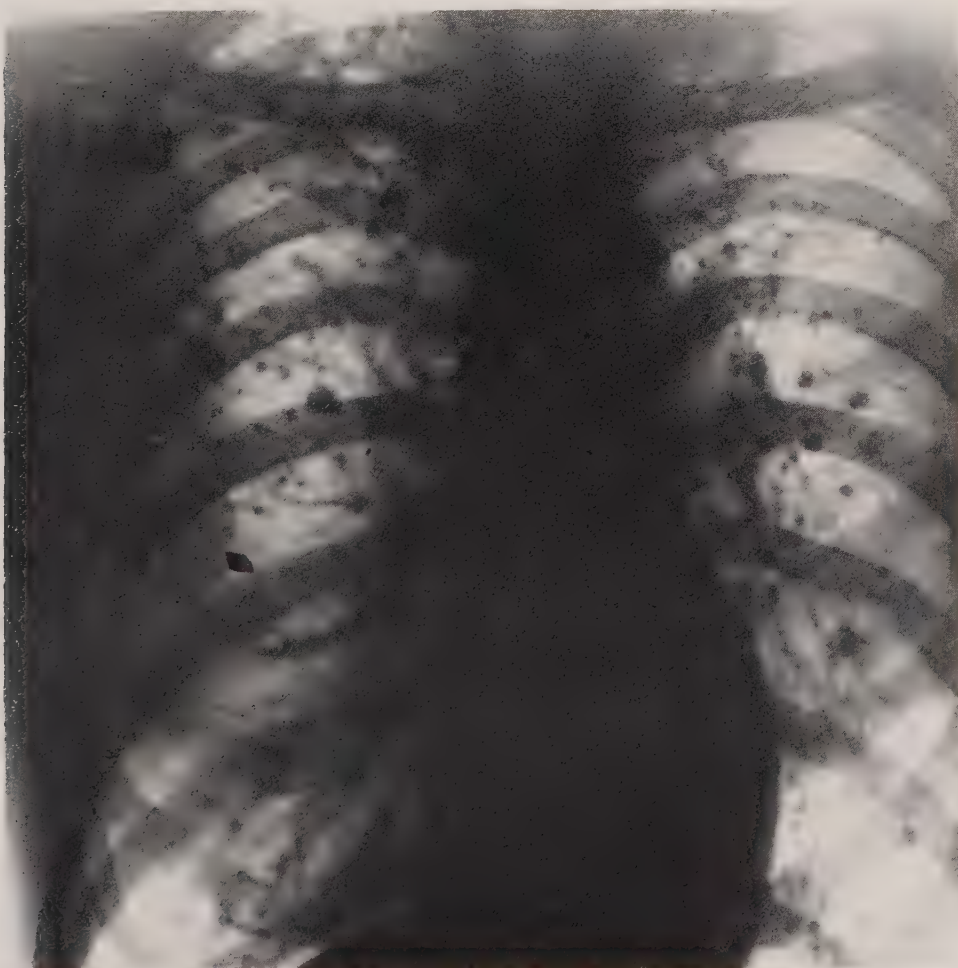
RIGHT.

LEFT.

HEALING IN PULMONARY TUBERCULOSIS—*contd.*



H.13.—E.T., female, aged 39. Skiagram taken 11-2-37 shows calcified nodules mainly in left lung (notice the small black spots on right side of picture). Patient first notified 19-5-19 (nearly 18 years earlier) when residing in another part of the country. Brother also has tubercle bacilli in the sputum. Father, sister, and another brother said to have died from tuberculosis. Patient has now no cough or sputum.

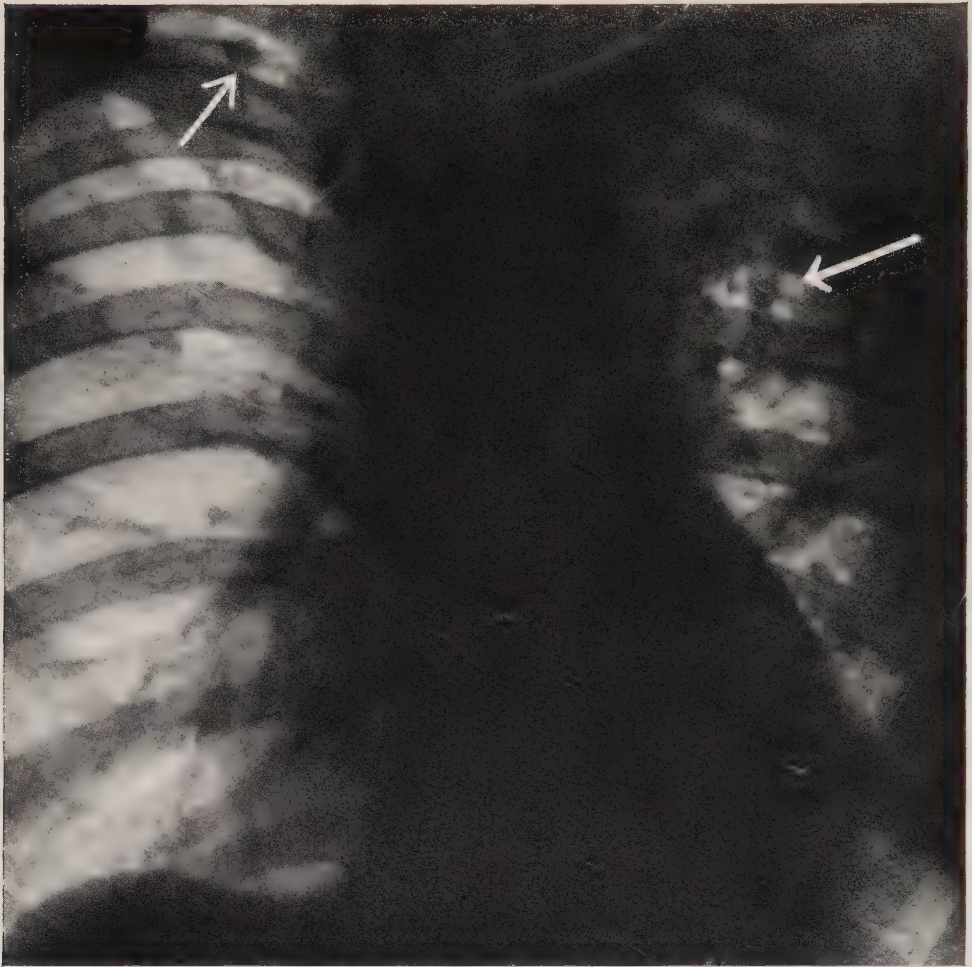


H.14.—G.H., male, aged 40. Skiagram taken 3-9-36 shows multiple, small, calcified nodules (seen as black spots of various sizes) throughout both lungs. First examined by tuberculosis officer 3-9-36. Had had pleurisy "both sides" in 1917 followed by intermittent "bronchitis" for years.

[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.



H.15.—F.W., male, aged 51. Skiagram taken 9-7-35 (7 years after first examination by tuberculosis officer) shows calcified nodules (black spots) in right upper zone and left upper and middle zones. Illness commenced with hæmoptysis; sputum positive. Now no sputum and fit for work.

[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.

the greater part of one or both lungs, producing such extensive scarring as to lead to displacement of organs and tissues, *e.g.*, deviation of trachea, mediastinum and heart towards the affected side. Again, evidence of healing may be present in one part and active disease elsewhere. These considerations are important in estimating prognosis and prescribing treatment. Let us now consider a few of the manifestations of the healing process seen by x-ray study. For comparison, a picture showing the woolly, mottled appearance of active disease is included (skiagram H.1).

Fibrosis. This may be minimal and difficult to distinguish, even when replacing fairly extensive disease (see skiagrams H.2(a) and 2(b)). Skiagram H.2(b) shows very little evidence of disease in the upper zone. (Note rise of diaphragm after phrenicectomy).

Usually, a minimal fibrosis appears as a clear-cut stellate shadow (see skiagrams H.3(a) and 3(b), where the fibrosis replaces cavitation). A small, localised fibrosis is frequently found at one or other apex, where an opacity is seen above the clavicle in place of the ordinary translucent appearance. This is regarded as due to fibrosis and thickening of the overlying pleura (skiagram H.4—compare left and right apices).

A small, localised fibrosis, following fairly extensive infra-clavicular disease, is seen in skiagrams H.5(a) and 5(b), and a more extensive upper lobe fibrosis in H.6.

Where the original disease is still more extensive, and the patient's progress good, fibrosis is correspondingly more marked and appears as a dense shadow (see skiagrams H.7(a), 7(b) and 7(c)).

Scar tissue, by contraction, tends to exercise a pull on adjacent structures. In some cases this may be so great as to cause deviation of the heart and mediastinum to the affected side.

Skiagram H.8 shows slight deviation of the heart towards the right side. An example of great displacement to the right side is seen in H.9.

The fibrosis may be so extensive that the affected lung is more or less opaque (see skiagram H.11); deviation of the trachea is also well seen. There was no evidence of pleural effusion in this case, and it will be noticed that the left costo-phrenic angle is translucent.

Localised scarring, replacing tuberculous disease, even when extensive and accompanied by cavity formation, is well shown in

skiagrams H.10(a), 10(b), 10(c), and 10(d). It will be noticed that, in addition to the fibrosis, some calcification has also occurred. The details of this case are of particular interest :

E.S., female, aged 23, whose sister died from tuberculosis, was first seen when 13 years of age by the tuberculosis officer in April, 1926. Tuberculous cervical adenitis was diagnosed, and she remained under dispensary supervision until February, 1930, when she was examined at home in consultation with her medical attendant. It was stated that she had had influenza six weeks previously and that this had been followed by hæmoptysis five days before examination. Clinically, some small, firm, cervical glands, especially on the right side, were noticed. The physical signs were few and mainly in the upper part at the front of the right chest. The skiagram (H.10(a)) shows well-marked mottling in the upper part of both lungs, especially in the left, with what appears to be small, calcified glands at the root of the neck above the right clavicle. The patient was sent to a pulmonary hospital where she remained for six months, and while there tubercle bacilli were discovered in her sputum. She was discharged on the 31st October, 1930, and a skiagram (H.10(b)) taken immediately afterwards showed definite clearing in the left upper zone, pointing to fibrotic change, but in addition the presence of a large cavity was now visible. The heart was deviated to the left. A further skiagram (H.10(c)) taken on the 1st October, 1931, showed fibrosis below the right clavicle, with small, calcified cervical glands. There was still a large cavity at the left apex. Specimens of sputum examined in May and November, 1932, and April and November, 1933, were negative. Skiagram H.10(d) shows the condition on the 23rd April, 1937. The cavity previously seen in the upper part of the left lung has disappeared, and the process of calcification and fibrosis is well established in both upper zones. The sputum is still negative.

Calcification. In routine chest examinations, it not infrequently happens that a single, clear-cut opaque nodule is seen in the skiagram. This is caused by a deposit of lime salts in an old tuberculous focus and, when single, is now considered to be the site of invasion by the tubercle bacillus probably many years earlier (see skiagram H.12).

More than one nodule may be seen. Skiagram H.13 shows several nodules mainly scattered in the upper part of the left lung. Occasionally, they are seen in an even more widespread form (H.14).

Fibrosis and calcification are frequently associated. This is shown to some extent in skiagram H.10(c) and in a more marked degree in H.15.

As a result of fibrosis and calcification, the diseased area, containing dead and attenuated tubercle bacilli, becomes walled off. If this process is incomplete, reactivation of the disease may occur, whenever a patient's resistance is lowered. On the other hand, experience has shown that, where a patient's condition has remained quiescent for a period of five years, recrudescence of the disease is comparatively uncommon.

V.—AVERAGE DURATION OF ILLNESS OF POSITIVE SPUTUM PATIENTS DYING IN 1920 AND 1935.

ANALYSIS OF TWO GROUPS OF PATIENTS WITH POSITIVE SPUTUM DYING DURING THE YEARS 1920 AND 1935 showing : (1) Duration of illness up to time of consulting medical attendant ; (2) period under medical attendant before first examination by tuberculosis officer ; and (3) duration of life after first examination by tuberculosis officer.

For the successful control of tuberculosis, cases should be discovered and treated in an early stage of the disease. To bring this about, efficient co-operation with the medical practitioners is essential, but even this is of little value without the co-operation of the patients.

We have in Lancashire for many years tried to educate the public to seek medical advice as soon as certain symptoms identifiable with tuberculosis became manifest, but it is not easy to assess quantitatively the results of these educative measures. In an attempt to make this assessment I have taken the date on which the patient was examined for the first time by the tuberculosis officer, and have measured the period of illness *before* that date (as ascertained from the patient or relatives) and the duration of life *after* that date. The period of illness before the date of first examination by the tuberculosis officer has been divided to show the duration of illness up to the time of the patient consulting his medical attendant, and also the time the patient was under his medical attendant before the first examination by the tuberculosis officer.

It will be realised that this particular investigation can only be made on patients who have died from tuberculosis, and to put the question of diagnosis beyond doubt, the figures have been confined to patients classified as T.B. plus, that is cases in which tubercle bacilli have been demonstrated in the sputum. This of course limits the enquiry to the more advanced cases applying for treatment, and consequently excludes the more hopeful type of case with negative sputum. I have taken two years, namely 1920 and 1935, and for each year have made an investigation of over 200 consecutive deaths from tuberculosis.

The following Table 5 shows the results of the investigation :

	1920.	1935.	Difference.
(a) Number of consecutive deaths of cases classified as T B. plus and included in this investigation	217	280	—
(b) Average duration of illness <i>before</i> first examination by tuberculosis officer (according to statement of patient or, occasionally, relatives) :	Months.	Months.	Months.
(i) Period of symptoms from onset to patient consulting medical attendant.....	11.7	9.5	2.2
(ii) Period under doctor before first examination by tuberculosis officer	5.0	3.0	2.0
	16.7	12.5	4.2
(c) Average duration of life <i>after</i> first examination by tuberculosis officer (<i>i.e.</i> , from date of first examination by tuberculosis officer to date of death)	18.3	27.4	9.1
(d) Average duration of illness from date of onset to date of death—(b) plus (c) ...	35.0	39.9	4.9

N.B.—Mathematically the differences between the 1920 and 1935 values for (b) and (c) are respectively 2.3 and 3.7 times their standard errors, which may be regarded as statistically significant.

Summary and Conclusions.

1. The initial examination by the tuberculosis officer of 217 consecutive T.B. plus patients dying in 1920 showed that the duration of their previous illness, *i.e.*, from date of onset to date of first examination by tuberculosis officer, averaged 16.7 months, as against 12.5 months for a group of 280 corresponding cases in 1935.

2. The reduction of 4.2 months in the average duration of illness, before examination by the tuberculosis officer, of patients dying in 1935 compared with 1920 indicates that the tuberculosis officer got the cases a little earlier than formerly. This was due to two causes : (i) The patients consulting their family doctors earlier ; and (ii) the family doctors referring the cases to the tuberculosis officer more readily.

3. The 1935 group of patients lived on an average 9.1 months longer than the 1920 corresponding group after the initial examination by the tuberculosis officer.

4. The longer duration of life (9·1 months) after the initial examination by the tuberculosis officer may be due to the following factors : (a) Patients are being seen at an earlier stage of the disease ; (b) patients are living in a better environment ; and (c) patients are benefiting by improved methods of treatment. It is not possible, however, to assess the value of modern methods of treatment as this investigation deals only with patients who have died, taking no account of patients who are still under supervision or who have recovered.

5. The investigation shows that the efforts of the Public Health services to encourage patients to seek treatment earlier in the course of their illness have met with some success. The reduction in the average duration of illness before initial examination by the tuberculosis officer of the particular group investigated has been some 25 per cent.

6. The investigation of the duration of illness before examination by the tuberculosis officer offers scope for further research to show any differences as between the sexes, age-groups, and negative and positive sputum cases. Such research could include patients who are living. It may be possible to undertake an extension of the investigation for a future report.

VI.—HOUSING CONDITIONS OF COUNTY PATIENTS.

Housing conditions are known to be a most important factor in the spread of pulmonary tuberculosis. In order to prevent the spread of infection, the tuberculosis officers and the tuberculosis health visitors make every effort to secure that patients in an infective state occupy a separate bedroom, or at least a separate bed. To enable this to be done, bedsteads and mattresses are kept in stock at the dispensaries and are available for loan to patients otherwise unable to provide a separate bed. From care funds, necessitous cases are assisted to purchase the necessary bed clothes.

Copies of all reports by the tuberculosis health visitors on the detailed environmental conditions of a patient are forwarded to the appropriate medical officer of health.

Every instance of unsatisfactory housing is considered on its merits by the tuberculosis officer concerned, who, when the circumstances indicate, supports an application from the patient to the local authority for removal to a new house.

The following Table 6 shows the position in the County of those adult patients suffering from pulmonary tuberculosis in an infectious state who had not a separate bed, as ascertained at the annual surveys taken at the end of 1927, 1930, 1933, and 1936 :—

	1927	1930	1933	1936
1. Number of adult infectious cases of pulmonary tuberculosis on County dispensary registers at the end of the year	1,818	1,845	1,893	1,856
2. (a) Number of adult infectious pulmonary cases not occupying a separate bed at home ...	144	109	113	75
(b) <i>Less</i> number of foregoing cases in 2 (a) isolated in sanatoria and pulmonary hospitals ...	43	36	27	15
3. <i>Net number</i> of adult infectious pulmonary cases at the end of the year living <i>at home and not occupying a separate bed</i>	101	73	86	60
4. Percentage of adult infectious pulmonary cases at home at the end of the year not occupying a separate bed	5·5	3·9	4·5	3·2

In a certain number of cases where the home conditions cannot be improved, and particularly when there are children in the home, the patient is removed to a County pulmonary hospital for isolation, as shown in item 2 (b) of Table 6.

Power exists under Section 172 of the Public Health Act, 1936 (which came into operation on the 1st October, 1937), to secure the compulsory isolation of an infectious case on the order of the magistrates subject to the following conditions :—

“ That the lodging or accommodation provided for that person is such that proper precautions to prevent the spread of infection cannot be taken, or that such precautions are not being taken.

“ That serious risk of infection is thereby caused to other persons.

“ That a suitable hospital or institution exists for the reception and accommodation of that person.”

So far, it has only been necessary for one County patient to be so dealt with, as satisfactory results are obtained by methods of persuasion. It must be borne in mind that all patients are instructed when at home and at institutions in the measures to take to prevent the spread of infection. Furthermore, the infectious cases without a separate bed are an ever-changing group, representing new cases awaiting removal to institutions, advanced cases too ill for removal, patients whose housing conditions are going to be improved, and married persons who do not provide serious risk of infection to other persons and to whom the Act does not apply. So that, for example, the group of 60 patients at the end of 1936 will undergo many changes in personnel before another year has passed.

The efficacy of the efforts made by the dispensary staff to improve the housing conditions of the patients is borne out when it is stated that only a small proportion—not exceeding 10 per cent.—of the infectious cases without a separate bed are living in houses which fall below the standards of room space, etc., laid down in the Housing Act, 1935, as revealed by the inspections made by the local authorities. Under the Act, it is the duty of the local authority to re-house families who occupy overcrowded houses; tuberculous patients living in such houses will consequently benefit.

Since the urban and rural district councils commenced their large scale housing schemes soon after the Great War, it has been the practice of the consultant tuberculosis officers to report to the local medical officers of health any tuberculous patient who occupied a house or dwelling unsuitable on account of size, situation, or condition. As the result of such representation, many patients and their families have had better houses placed at their disposal by the local authorities.

The following table shows the housing conditions of all patients under treatment or supervision at the end of 1936. Whilst every effort is made to secure that infectious cases occupy a separate room, or at least a separate bed, no useful purpose is served by making the same insistence in regard to patients with the disease quiescent or arrested. The non-pulmonary cases are given separately, and only a very small number indeed may be considered infectious.

TABLE 7.—*Housing statistics of 7,402 County patients.*

	Pulmonary cases considered infectious.		Pulmonary cases considered not infectious.		Non-pulmonary cases.	
	Under 15 years	15 years & over	Under 15 years	15 years & over	Under 15 years	15 years & over
Patients occupying a separate bedroom	6	1,312	34	1,151	279	617
Patients occupying a separate bed but not a separate bedroom	9	469	63	440	544	368
Patients not occupying a separate bed	1*	75*	45	652	469	868
TOTAL	16	1,856	142	2,243	1,292	1,853

* 16 of these 76 cases were isolated in sanatoria or pulmonary hospitals at the end of 1936.

It will be seen that 76 patients suffering from pulmonary tuberculosis and considered to be infectious were not occupying a separate bed when at home at the time the census of the housing conditions was taken at the end of 1936. Of this number, 16 were away from home and isolated in pulmonary hospitals or sanatoria, leaving (from a total of 1,872 infectious cases) 60, or 3·2 per cent., infectious cases at home not occupying a separate bed. The percentage in 1935 was 3·3.

Appendix IV of this report shows the housing conditions of the patients in each dispensary area.

VII.—NOTIFICATION AND NON-NOTIFICATION OF TUBERCULOSIS CASES.

It is the statutory duty of every medical practitioner to notify within 48 hours to the local medical officer of health any case of tuberculosis occurring in his practice, and the medical officer of health is charged with the duty of keeping a corrected register of such cases reported in his sanitary district.

The statutory notifications are made under the Public Health (Tuberculosis) Regulations, 1930, which came into force on 1st January, 1931. These regulations consolidate the regulations issued in 1912, 1921 and 1924, and they also include several minor amendments of an administrative nature.

For measures dealing with tuberculosis to be successful, it will be generally agreed that an accurate and complete knowledge of all the existing cases is required. If cases only become known through the death certificate, control of the spread of infection cannot be effective.

I have continued to direct special attention to the notification of cases of tuberculosis, and have engaged in correspondence with medical practitioners, medical officers of health, and medical superintendents, over many individual cases.

The extent of non-notification of pulmonary cases in the Administrative County is shown in the following Table 8 :—

Year.	Number of deaths from pulmonary tuberculosis recorded.	Deaths not notified under Regulations during life.	
		Number.	Percentage to pulmonary deaths.
1918	1652	303	18·3
1919	1339	221	16·5
1920	1323	177	13·3
1921	1301	135	10·3
1922	1362	105	7·7
1923	1250	85	6·8
1924	1215	64	5·2
1925	1205	67	5·5
1926	1158	58	5·0
1927	1105	54	4·8
1928	1066	56	5·2
1929	1102	62	5·6
1930	1046	46	4·3
1931	1021	61	5·9
1932	975	37	3·8
1933	1010	45	4·4
1934	848	35	4·1
1935	855	35	4·1
1936	856	46*	5·3*

* Of the 46 deaths which, in 1936, escaped statutory notification

as tuberculous cases during life, it should be stated that 8 were known to the tuberculosis officer and 8 died in public institutions. If these 16 deaths which were known otherwise than by the official primary notification under the Regulations be deducted, then the percentage of 5·3 *non-notified fatal cases would be reduced to 3·5, which figure may be taken as the real extent of missed notifications resulting in cases escaping supervision by the health authorities.*

The improvement which has been secured in recent years in the notification of cases of pulmonary tuberculosis before death would not have been practicable without the cordial co-operation of the local medical officers of health and, of course, the general practitioners who make the notifications.

There is no doubt that in this Administrative County a much smaller proportion of cases of tuberculosis escapes notification than is frequently the experience in other parts of the country. Thus, we have a smaller proportion of unknown cases or unknown sources of infection remaining outside the measures for the control of tuberculosis.

For non-pulmonary tuberculosis, there were 24 non-notified fatal cases in 1936, which on the total deaths from this form of the disease equalled 12·5 per cent. The percentage in the previous year was 16·4.

SPECIAL ENQUIRY INTO NON-NOTIFIED FATAL CASES.

Commencing in October 1920, special investigations have been carried out in regard to every individual death recorded which had not been previously notified. The procedure followed has been to examine the names of persons dying from tuberculosis given in the weekly returns of deaths sent, by arrangement, to the tuberculosis department by the district registrars. The names are compared with the notification register, and the death of every person not previously reported as a case under the Public Health (Tuberculosis) Regulations is enquired into; information as to the circumstances attending non-notification is obtained from the tuberculosis officer and, if necessary, the medical attendant.

In 1936, there were 70 such deaths, and the enquiry for that year gave the following important results :—

(1) That 21 (8 pulmonary, 13 non-pulmonary) of the 70 deaths in 1936 occurred in public institutions.

(2) That of the remaining 49 deaths, the circumstances of non-notification were as stated in the following table :—

TABLE 9. *Circumstances of non-notification of fatal cases.*

	Period 1st January to 31st December, 1936.		
	Pul- monary.	Non-pul- monary.	Total.
Doctor in attendance shortly before death—			
1 week or less	1	—	1
1 to 2 weeks	2	—	2
Complicated cases, presenting difficulty in diag- nosis	2	3	5
Misinterpretation of Tuberculosis Regulations and notification believed to be unnecessary—			
Cases previously notified in another area ..	6	1	7
Cases known to tuberculosis officers—con- siderable doubt as to diagnosis in some of these cases	8	—	8
No doctor in attendance	10	—	10
Temporary resident	1	—	1
Attended by more than one doctor, and notifi- cation believed to have been made by first practitioner	1	2	3
Notified after death	3	1	4
No apparent reason for non-notification	3	2	5
	37	9	46
Tuberculosis not primary cause of death	1	2	3
TOTAL	38	11	49

(3) *This table shows that in only 5 of the 49 deaths was there no reasonable excuse for non-notification.*

The efficiency of notification in England varies directly with the efficiency of the county council or county borough scheme dealing with tuberculosis. If there is no really comprehensive scheme, if there are poor and newly qualified, part-time, and badly paid tuberculosis officers, if there are insufficient means for expert diagnosis, and too few beds for treatment, then a high proportion of non-notified fatal cases will be the rule and not the exception.

TOTAL "KNOWN SOURCES OF POSSIBLE INFECTION."

One effect of the better notification of cases by practitioners has been to add to the number of new cases in recent years and statistically to make the figures disadvantageously comparable with the earlier years when a larger number of cases escaped notification.

It is, however, possible to obtain a truer record of the number of new cases of pulmonary tuberculosis occurring year by year by adding together (a) the notifications and (b) the deaths which occurred without notification being made during life; this total gives clearly the number of known sources of possible infection as Table 1 on page 2 shows.

VIII.—APPLICATIONS FOR TREATMENT.

All statutorily notified cases do not come under the tuberculosis scheme. For instance, tuberculosis patients in mental hospitals are treated in such hospitals, and are not on the dispensary register. The tuberculosis officer assists occasionally in diagnosis at mental hospitals ; it may be that even more co-operation between the two services would be beneficial. Again, a small proportion of cases are in very good financial circumstances, and prefer to arrange and pay for their own treatment. Another small proportion consists of persons who have delayed consulting their doctors until they are in the last stage of the disease and for whom treatment under the scheme for the few days before death is of no use.

During 1936, there were 1,970 cases notified under the Public Health (Tuberculosis) Regulations as suffering from tuberculosis (all forms), whereas the number of persons who applied for treatment to the County Council was 1,771, equal to 89 per cent. of the notifications.

Application is in the simplest form, consisting of a declaration as to residential qualification, particulars of membership in approved society (if any) under the National Health Insurance, name, age, and address. Treatment under the scheme, therefore, is not compulsory on a patient, and is provided without charge.

Table 10 below shows the number of “ new ” patients (1,771) who applied for treatment under the County scheme during the year 1936 :—

	Number of applications received during 1936.	Diagnosis of new applicants for treatment.			
		Pulmonary cases.	Pulmonary and non-pulmonary.	Non-pulmonary cases.	Diagnosis not confirmed (non-tuberculous).
Men	739	592	19	123	5
Women	612	428	13	164	7
Boys	228	29	1	195	3
Girls	192	29	1	161	1
TOTAL ...	1,771	1,078	34	643	16

Applications received in previous years were :—1918–22 average, 2,255 ; 1923–27 average, 2,258 ; 1928–32 average, 1,989 ; 1933, 1,920 ; 1934, 1,820 ; 1935, 1,725 ; compared with 1936, 1,771. Thus there were 46 more applications in 1936 than in the previous year.

CLASSIFICATION OF NEW PATIENTS.

(a) *Pulmonary tuberculosis.*

During 1936, applications for treatment were received from 1,112 new patients, and these were reported by the tuberculosis officers to be in the undermentioned stages of the disease on the first examination :—

T.B. minus (sputum negative or absent)	388 or 34·9 per cent.
T.B. plus 1 (early cases, sputum positive)	104 or 9·3 „ „
T.B. plus 2 (intermediate cases, sputum positive)	478 or 43·0 „ „
T.B. plus 3 (advanced cases, sputum positive)	142 or 12·8 „ „

It is well known that, throughout the country, tuberculosis officers do not see many of the new cases in the early stage of the disease. Some patients through ignorance, others on account of economic reasons, neglect to consult a doctor when in the early stage, and so lessen their chance of recovery. In the Administrative County we have for several years made special investigations into the reasons underlying such disastrous delay on the part of patients. These investigations have been continued in 1936, yielding the following conclusions which correspond closely with those published in previous reports :—

1.—Altogether 74·0 per cent. of the 142 advanced cases either had no doctor or had only been attending their doctor for less than two months when first examined by the tuberculosis officer or notified. The corresponding percentage in 1935 was 70·0.

2.—After making allowance for a percentage of fulminating cases (“galloping consumption”) a large proportion—three fourths—of patients had felt ill for one or more months before consulting a doctor.

3.—The reason for late notification and patients delaying their application until in an advanced stage of the disease is chiefly the disinclination or unwillingness of the patients to report themselves to their doctor when feeling ill. This is due mainly to the insidious onset of the disease, the discomfort being only slight at first.

4.—There does not appear to be evidence in any large proportion of cases of unreasonable delay on the part of family doctors referring cases to the tuberculosis officer.

5.—The initiative to seek treatment when ill rests with the patient himself, and the only feasible remedy lies in the education of the public as to symptoms and common dangers of tuberculosis and the need for securing prompt treatment. This cannot be too strongly or too often emphasised.

In previous reports I have mentioned the teaching of hygiene to the older children at school, a matter which has been brought to the notice of the Director of Education for the County.

The tuberculosis medical staff have to depend very largely on the general practitioners throughout the County for bringing forward tuberculous patients, and it is satisfactory to note that 92 per cent. of new cases (excluding contacts) are sent *before notification* to the tuberculosis officers for an opinion as to diagnosis. Too much importance is still laid by some doctors on sputum examinations alone, and occasionally too long a time is allowed to elapse in order

that the sputum may be tested; or steps are not taken to report the case until it is returned as “positive.”

(b) *Non-pulmonary tuberculosis.*

There were 643 new cases diagnosed by the tuberculosis officers as suffering from non-pulmonary tuberculosis in the following forms :—

Bones, joints and spine	146	} 643
Abdomen	...	...	...	67
Other organs	...	...	...	54
Peripheral glands	...	...	...	340
Skin	...	...	...	36

In 1935 the number of applications from non-pulmonary cases was 592.

IX.—THE DISPENSARY ORGANISATION.

A tuberculosis dispensary should be the centre of activity, for a town or district, in regard to measures for the prevention of the disease, the expert examination and diagnosis of cases, together with the supervision, special treatment, and care of all known tuberculous persons.

For dispensary purposes, the Administrative County is divided into five large areas, average population 321,000, and three small areas (see folding Table A, page 42).

Each large area is in the charge of a consultant tuberculosis officer, and to help the consultant there are two assistant tuberculosis officers, four to seven tuberculosis health visitors, and a clerical staff of two. In each area there is a chief dispensary, and two or more branch dispensaries; at the chief dispensary is co-ordinated the whole of the work required in that particular area. The County Council have provided in each of these large areas a sanatorium-hospital containing up to 56 beds for the treatment and isolation of patients near their homes. The consultant tuberculosis officer of the particular dispensary area acts as the visiting medical superintendent.

The three small dispensary areas—Furness, Fylde, and Wigan County—are in the charge respectively of the medical superintendent of the High Carley Sanatorium (118 beds for pulmonary tuberculosis), the Elswick Sanatorium (70 beds for pulmonary tuberculosis), and the Wrightington Hospital (226 beds for non-pulmonary tuberculosis and combined cases). These small areas are each equipped with one dispensary, and have one or two tuberculosis health visitors; the clerical work is done in the office of the institution.

Thus, the dispensary side of the work is not divorced from the institutional side, or *vice versa*.

The chart overleaf illustrates the organisation and work of one of the five large dispensary areas in the Administrative County.

The duties of a consultant tuberculosis officer will, therefore, include in any week the holding of dispensary sessions for diagnosis and advice as to treatment; the visitation in consultation with the medical attendant of patients in their homes for diagnosis and advice as to treatment; the examination of patients undergoing artificial light treatment at the dispensary centre; the holding of

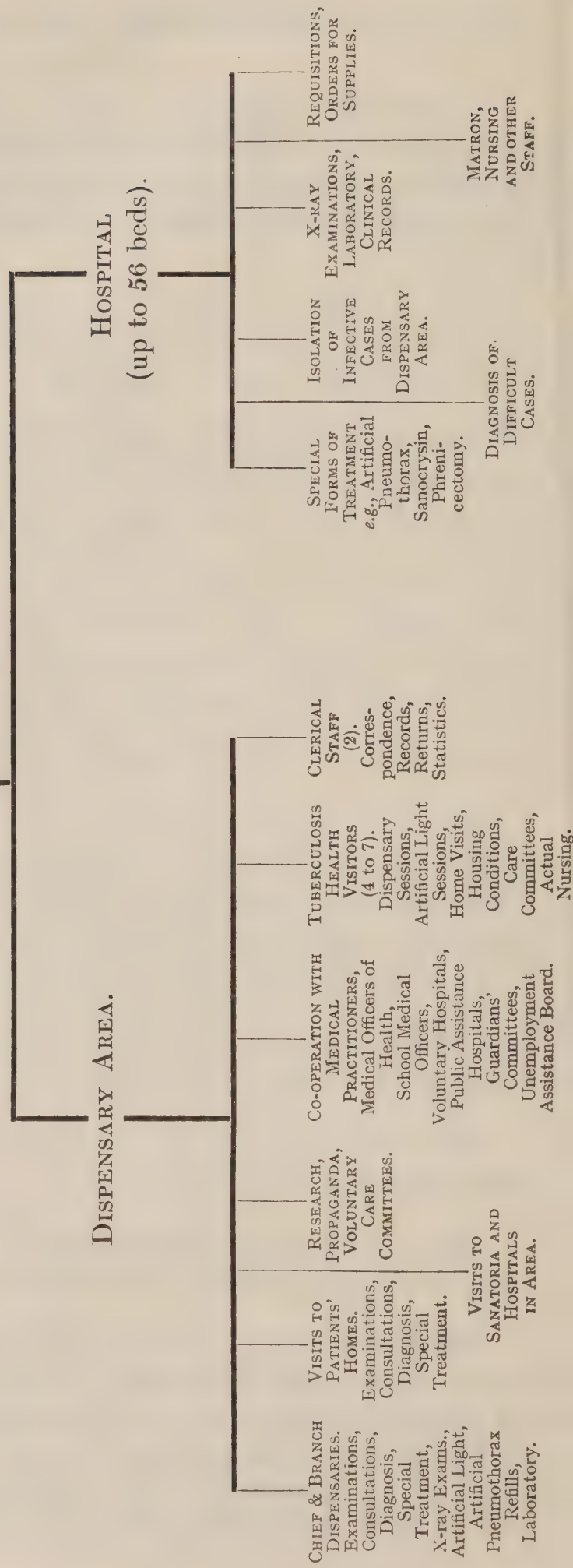
ADMINISTRATIVE COUNTY OF LANCASTER.

Chart illustrating the organisation and work of one of the five large dispensary areas in the County. The scheme generally is under the control of the Central Tuberculosis Officer acting for the County Tuberculosis Committee.

CONSULTANT TUBERCULOSIS OFFICER

in charge of a large dispensary area (average population 321,000).

TWO ASSISTANT TUBERCULOSIS OFFICERS.



sessions at the dispensary for x-ray examinations ; continuation of artificial pneumothorax treatment ; the visitation of the pulmonary hospital on four or five days per week for routine and special treatment, and administration ; the attendance at meetings of voluntary care committees ; arrangement of work with the two assistant tuberculosis officers, the tuberculosis health visitors and the clerical staff.

The work done through the dispensary organisation during the year 1936 is dealt with further in Chapter X.

X.—SUMMARY OF WORK DONE THROUGH THE DISPENSARY ORGANISATION.

CASES UNDER SUPERVISION.

On the 31st December, 1936, there were on the dispensary registers the following numbers of cases :—

					Males.	Females.	Total.
Pulmonary tuberculosis :							
Under 15 years of age	...	...	...	...	78	80	158
15 years and over	...	...	...	...	2,263	1,836	4,099
Non-pulmonary tuberculosis :							
Under 15 years of age	...	...	...	...	693	599	1,292
15 years and over	...	...	...	...	801	1,052	1,853
TOTAL PATIENTS ON DISPENSARY REGISTERS					3,835	3,567	7,402
Doubtful cases (diagnosis not determined)					...	...	32

On the estimated population of the Administrative County, namely, 1,842,900, the 7,402 cases represent an incidence of 4.01 per 1,000.

The medical classification* of the 7,402 patients was as under :—

						Disease active.	Disease quiescent.	Total.
Pulmonary tuberculosis :								
T.B. minus	...	...	...	...	...	551	927	1,478
T.B. plus 1	...	...	...	...	...	346	299	645
T.B. plus 2	...	...	...	...	...	1,432	467	1,899
T.B. plus 3	...	...	...	...	...	196	39	235
Total	...	...	...	...	...	2,525	1,732	4,257
Non-pulmonary tuberculosis :								
Bones and joints	...	...	...	...	...	293	345	638
Spine	...	...	...	...	...	133	153	286
Abdomen	...	...	...	...	...	91	190	281
Other organs	...	...	...	...	...	71	83	154
Peripheral glands	...	...	...	...	...	430	1,018	1,448
Skin	...	...	...	...	...	229	109	338
Total	...	...	...	...	...	1,247	1,898	3,145
TOTAL PULMONARY AND NON-PULMONARY						3,772	3,630	7,402

* Classification in accordance with Memorandum 37/T (Revised) issued by the Ministry of Health in October, 1930. See Appendix X for definitions.

The following table shows the dispensary work done in the Administrative County of Lancaster during 1936, compared with all counties in England, and England (all areas) :—

TABLE 11.—*Dispensary Work done during 1936 in Lancashire, all Counties in England, and England (All Areas) calculated per 100 Deaths from Tuberculosis.*

	Ratio per 100 deaths from Tuberculosis.		
	Lancashire.	All counties in England.*	England (all areas).
Number of new cases examined ... Children	97	97	98
Adults	336	248	264
Number of new contacts examined.. Children	44	90	100
Adults	50	62	78
Total new cases and new contacts examined	527	497	540
Number of new cases and new contacts diagnosed as suffering from :			
Pulmonary tuberculosis ... Children	4	8	10
Adults	98	98	105
Non-pulmonary tuberculosis ... Children	32	20	18
Adults	28	15	13
Total new cases and new contacts diagnosed as suffering from tuberculosis	162	141	146
Number of sputum examinations	516	368	468
Number of x-ray examinations	999	414	467
Number of consultations :—			
Personal	58	100	75
Other	614	443	467
Number of home visits by tuberculosis officers	442	428	299
Number of home visits by tuberculosis health visitors ...	4,013	2,542	2,909
Number of patients' dispensary attendances	2,362	2,134	2,955
Number of patients on the dispensary registers at the end of the year :			
Pulmonary tuberculosis ... Children	15	52	66
Adults	391	426	437
Non-pulmonary tuberculosis ... Children	123	110	101
Adults	178	87	78
Total	707	675	682
Number of T.B. plus cases on the dispensary registers at the end of the year	265	243	252
Number of cases remaining undiagnosed at the end of the year...	3	26	40
Number of cases removed from the dispensary registers as recovered	62	51	49
Number of recovered cases restored to the dispensary registers...	5	2	2

* Excluding London.

A further detailed analysis (including age-groups) of the number of tuberculous cases on the dispensary registers is given in Appendix III, from which the following proportions have been calculated :—

(a) PULMONARY TUBERCULOSIS.					Per 1,000 of child population (0 to 15).	Per 1,000 of adult population (15 and over).
Total number of cases of pulmonary tuberculosis per 1,000 of the population						2.30
Number of <i>active</i> cases per 1,000 of the population ...						1.37
Number of <i>quiescent</i> cases per 1,000 of the population ...						0.93
Number of <i>T.B. plus</i> cases—children					0.04	
adults						1.91
Number of <i>T.B. minus</i> cases—children					0.34	
adults						0.92
Of the total cases of pulmonary tuberculosis 3.71 per cent. were children under 15 years of age.						
(b) NON-PULMONARY TUBERCULOSIS.						
Total number of cases of non-pulmonary tuberculosis per 1,000 of the population						1.70
Number of <i>active</i> cases—children					1.22	
adults						0.52
Number of <i>quiescent</i> cases—children					1.99	
adults						0.76
Number of cases, divided according to the part affected :—						
Bones, joints, and spine—children					0.87	
adults						0.39
Abdomen—children					0.28	
adults						0.11
Peripheral glands—children					1.94	
adults						0.46
Skin—children					0.08	
adults						0.21
Other organs—children					0.03	
adults						0.09

The foregoing proportions show the main factors in the incidence of tuberculosis, and if other authorities published similar information valuable comparisons could be made.

X-RAY EXAMINATIONS.

An x-ray plant for the use of the consultant tuberculosis officer is provided at one of the dispensaries in each of the five large areas. In the small areas, namely, Furness, Fylde, and Wigan County, the x-ray work is carried out at the respective institutions of which the consultant tuberculosis officer is also medical superintendent—High Carley, Elswick and Wrightington.

In November, 1936, a new plant was installed at the Elswick Sanatorium, to replace the apparatus transferred to the Heath Charnock Pulmonary Hospital.

The following statement shows the x-ray work done at County dispensaries, sanatoria and hospitals during 1936 compared with several previous years :—

TABLE 12.

	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
Dispensary patients :								
Skiagrams ...	5,364	5,676	6,045	6,336	6,457	6,729	6,560	6,998
Screenings ...	519	854	1,417	2,163	2,638	3,408	3,464	3,471
Institutional patients:								
Skiagrams ...	1,320	2,162	2,458	3,763	3,779	3,914	4,371	4,799
Screenings ...	840	2,012	2,988	3,418	4,147	4,426	4,857	5,006
Total ...	8,043	10,704	12,908	15,680	17,021	18,477	19,252	20,274

The greater amount of artificial pneumothorax treatment for which radiological control is necessary accounts mainly for the increasing number of x-ray examinations.

The policy of placing an apparatus in each dispensary area for use by the consultant tuberculosis officer and his staff is, from experience, found to be the best method, because the tuberculosis officer, with his knowledge of the patient's history and clinical signs, is most fitted to make a correct interpretation of the skiagrams.

HOUSING.

See Chapter VI, pages 22 to 24.

EXAMINATION OF HOUSE CONTACTS.

By the systematic examination of house contacts of tuberculous cases, particularly the contacts of patients with positive sputum, many early or unsuspected cases of tuberculosis are detected. Owing to indifference or unwillingness, considerable difficulty—which, however, is gradually being overcome—is experienced in persuading contacts to come to the dispensary for examination, or even to submit themselves for examination at all.

By direction of the Ministry of Health, Memo. 37/T (Revised), cases are regarded as contacts only if the cause of their being examined is the fact that they have recently been, or still are, living in contact with some dispensary patient or other notified case; many persons suffering, or suspected to be suffering, from tuberculosis who attend at the dispensary of their own accord, or who are referred by a private medical practitioner, may give a history of previous contact with a known case of tuberculosis, but this does not bring them within the definition of “contacts.”

The following Table 13 shows the number of new contacts which have been examined in the Administrative County during 1936 :—

	Diagnosed as tuberculous.		Doubtful.	Non-tuberculous.	Total.
	Pulmonary.	Non-pulmonary.			
Examined at home ...	1	3	—	62	66
Examined at dispensary	28	9	5	869	911
Total ...	29	12	5	931	977
	41				

Of the 977 new contacts examined during the year, 41 were ultimately diagnosed as definite cases of tuberculosis—pulmonary 29, and non-pulmonary 12. These cases are equal to 41·96 per 1,000 of contacts examined, as against the proportion of 4·01 tuberculous persons, per 1,000 of the population, known to the dispensary staff in the County. Thus, the examination of selected contacts revealed many more tuberculous cases proportionately than would be found in the ordinary population.

It may be stated that of the 29 pulmonary cases, 44 per cent. were found to have a positive sputum.

Co-operation takes place between the tuberculosis medical staff and the school medical officers. The latter refer doubtful or suspicious cases to the tuberculosis officer; on the other hand the tuberculosis officer reports confidentially to the school medical officer the name of any school child who was or is actually in contact (*i.e.*, living in the same house) with an adult infectious case of pulmonary tuberculosis. The school medical officer is then able to take what action he considers desirable in regard to supervising the child or children so exposed to infection.

EXAMINATION OF SPUTUM.

As an aid to diagnosis, arrangements are in existence for the examination, free of cost, of specimens of sputum sent by medical attendants. At the chief dispensary in each of the five large areas a small laboratory is installed for this work; in the three small areas the examination of sputum is carried out at the institution in the area. In addition, an arrangement exists with the Director of the Public Health Laboratory, Manchester, for the examination of specimens including inoculation tests.

Cultivation tests have been carried out in the laboratories at the Wrightington Hospital and the High Carley Sanatorium, and gasolene concentration tests at the Elswick Sanatorium.

The following statement shows the results of the examinations made at the dispensary laboratories in 1936, compared with the previous year :—

					1935.	1936.
Positive (<i>i.e.</i> , tubercle bacilli present)	...	...	...	...	1,374	1,263
Negative (<i>i.e.</i> , tubercle bacilli not found)	...	...	...	...	5,393	5,790
Total	...	...	...	...	<u>6,767</u>	<u>7,053</u>

In addition to the 7,053 examinations made at the dispensary laboratories, the following work was done during 1936 at the Public Health Laboratory, Manchester :—

Inoculation tests...	...	...	...	...	138
Inoculation tests and cultures	...	...	...	...	17
Cultivation tests alone	...	...	...	...	3
Typing for bovine or human strain	...	...	...	...	20
Microscopical examinations	...	...	...	...	4

TUBERCULOSIS AND THE MILK SUPPLY.

The tuberculosis officers co-operate with the local medical officers of health in regard to any case of tuberculosis in a child in which the milk supply is suspected of being the source of infection. The initial procedure is for the tuberculosis officer to inform the medical officer of health, to ask if he is willing to have a bacteriological examination made of the suspected milk, and to take action, if necessary, on the farm. If the milk is designated, *e.g.*, accredited, then the matter is dealt with by the County Medical Officer of Health.

One case of pulmonary tuberculosis notified in March, 1936, required action by the local medical officer of health under the Public Health (Prevention of Tuberculosis) Regulations, 1925, which prescribe that a person suffering from tuberculosis of the respiratory tract shall not engage in an occupation involving the handling of vessels used for containing milk. The patient followed the occupation of "dairyman"; at first he distributed milk received by him in sealed bottles, but several months later changed to open milk. Consequently, to protect the public health, the medical officer of health had to advise his rural district council to serve the statutory notice under the Regulations requiring the patient to cease his occupation, and this was done by the clerk. The patient had been recommended by the appropriate tuberculosis officer of the County Council (who had acted in full co-operation with the medical officer of health) for sanatorium treatment, but he did not avail himself thereof until suspension from his employment. The patient submitted a claim for compensation to the rural district council which is being dealt with by the council and their legal advisers. No similar case has occurred in the County.

TUBERCULOSIS OFFICERS' VISITS TO SANATORIA AND HOSPITALS.

Periodical visits (mostly monthly) have continued to be paid by one or other of the consultant tuberculosis officers to the majority of the pulmonary hospitals, non-County sanatoria, and special hospitals treating County patients. These visits are of mutual help, inasmuch as they keep in touch the medical superintendent and the tuberculosis officer, who are able to confer on the patients' future treatment, the home circumstances, the provisions of the County scheme, and so on.

The following is the rota of visits for 1937 :—

Dr. G. H. Leigh	... Heath Charnock Pulmonary Hospital.
Dr. B. MacPhee	... Eastby Sanatorium, Barrowmore Tuberculosis Sanatorium and Settlement, Derwen Cripples' College and Robert Jones and Agnes Hunt Orthopædic Hospital.
Dr. G. Fletcher	... Aitken, Halifax and Springfield Sanatoria, and Chadderton Pulmonary Hospital.
Dr. G. Jessel ...	... Wilkinson Sanatorium, Liverpool Open-Air Hospital for Children, Leasowe, and Royal Liverpool Children's Hospital, Heswall and Thingwall Branches.
Dr. C. W. Laird	... Eccleston Hall and Hefferston Grange Sanatoria.
Dr. G. Leggat	... Westmorland Sanatorium.
Dr. E. H. A. Pask	... Pemberton Pulmonary Hospital and Warwickshire Orthopædic Hospital.

PROVISION OF SPECIAL NOURISHMENT.

Special nourishment is granted to tuberculous persons on the following conditions, which have been approved by the Ministry of Health :—

- (1) That special nourishment be in no case ordered for a period of more than three months, and if in any case a continuance of the treatment is considered from a medical point of view desirable, the Central Tuberculosis Officer to report the case specially to the County Tuberculosis Committee.
- (2) That special nourishment be granted to persons who are waiting for admission to sanatoria or hospitals, or have returned therefrom, when it is thought to be medically essential as part of the cure of the disease.
- (3) That special nourishment may be allowed to cases not included in the foregoing, provided that particulars of the cases are laid before the Tuberculosis Committee for consideration.
- (4) That each grant of special nourishment will only be allowed by the Tuberculosis Committee subject to the patient carrying out, in a satisfactory way, the medical treatment and such general hygienic measures as may be advised by the medical practitioner and tuberculosis officer.
- (5) That special nourishment be limited to orders for new milk and cream, unless on special report other nourishment be found desirable.
- (6) That the limit of expenditure be 7/- per week, unless an amount in excess of this sum is specially recommended on medical grounds by the Central Tuberculosis Officer and sanctioned by the Tuberculosis Committee.

During the year, 1,681 grants of special nourishment for varying periods were made to 758 individual patients as part of their medical treatment. The figures in 1935 were 2,092 grants to 867 patients.

SPECIAL SURGICAL APPLIANCES.

During 1936 the following surgical appliances were supplied to patients on the recommendation of the tuberculosis officers :—

Abdominal belt, 1 ; abduction frames, 3 ; artificial limbs, 6 ; back supports, 4 ; body belt, 1 ; caliper splints, 23 ; carapace, 1 ; celluloid splints, 30 ; cervical collar, 1 ; crutches, 3 ; elastic stockings, 1 pair ; hip splints, 2 ; hip support, 1 ; knee support, 1 ; leather anklets, 7 ; leg irons, 3 ; O'Connor extension, 1 ; pelvic belt, 1 ; sacro-iliac belts, 2 ; shoulder brace, 1 ; spinal frame, 1 ; spinal supports, 49 ; surgical belts, 2 ; surgical boots, 25 ; truss, 1 ; urinals, 8 ; wrist splint, 1.

PROVISION OF BEDSTEADS, MATTRESSES, AND NURSING REQUISITES.

In each County dispensary area a small stock of bedsteads, mattresses (but not bedding), and nursing requisites belonging to the County Council is available for loan to necessitous patients undergoing home treatment.

The bedsteads and mattresses, which are held at the disposal of the consultant tuberculosis officers, have proved of valuable assistance in securing the better sleeping accommodation at home of persons with pulmonary tuberculosis considered to be infectious.

The table following shows the number of these articles owned by the County Council, and also the number of patients who have been granted the use of the articles :—

TABLE 14.

Articles.	Quantity owned by County Council, 31/12/36.	Number of patients to whom articles have been loaned during 1936.	Articles in possession of patients on 31/12/36.
Bedsteads	217	31	178
Mattresses	211	40	178
Mattress covers	153	27	131
Air beds	7	6	3
Air cushions	157	146	100
Air pumps	7	2	—
Bath chairs	8	—	—
Bed cradles	7	—	—
Bed pans	101	93	53
Bed rests	54	24	26
Bed slippers	78	14	14
Extension apparatus	14	—	—
Fracture boards	2	—	—
Ground sheets	23	1	12
Hot water bottles	6	2	1
Ice bags	1	—	—
Rest chairs	5	—	1
Rubber sheets	23	4	4
Spinal boxes	16	—	—
Spinal carriages	14	2	2
Sponge beds	3	4	2
Urinals... ..	92	63	43
Water beds	7	4	—

SLEEPING SHELTERS.

There were, at the end of the year, 36 shelters in use by patients at their homes.

The loan of sleeping shelters is made to suitable cases on the recommendation of the tuberculosis officer, after careful consideration of the following points : (1) The condition of the patient and his ability to use the shelter properly ; (2) the position of the shelter ; (3) the home conditions of the patient ; and (4) the means of communication with the nearest inhabited building in case of a sudden relapse.

The number of persons in 1936 who were allowed the use of the shelters was 53.

I have to thank medical officers of health and sanitary inspectors throughout the County for much valuable help in connection with the removal, disinfection, and re-erection of shelters used by County patients.

TUBERCULOUS EX-SERVICEMEN.

Of the 7,402 patients under supervision of the dispensary staff at the end of 1936, 120 were discharged sailors, soldiers or airmen whose disease was held by the Ministry of Pensions to be attributable to or aggravated by service in the Great War, a pension being granted for the disability. The number of these tuberculous pensioners is declining, falling from 1,017 at the end of 1922 to the figure of 120 mentioned above.

TUBERCULOSIS DISPENSARIES AND STAFF.

Table A, here inserted, shows the dispensary areas with the populations, present staffs, the addresses of the 24 dispensaries at present in use, and the days and times on which they are open.

EVENING SESSIONS AT DISPENSARIES.

As in previous years, evening sessions have been regularly held at most of the dispensaries for the convenience of patients who are at work during the day.

ARTIFICIAL LIGHT TREATMENT

A report on the work done at the artificial light centres established at thirteen of the dispensaries is given in Chapter XI.

LANCASHIRE COUNTY COUNCIL.

Table A.—List of Tuberculosis Dispensaries in use in October, 1937, and the Tuberculosis Officers for the Dispensary Areas.

Dispensary Area	SANITARY DISTRICTS.			Estimated Civilian Population 1936.	MEDICAL STAFF October 1937.	NURSING STAFF.	DISPENSARIES	Days and Hours of DISPENSARY SESSIONS (Distinct from Home Visiting, attending Sanatoria, Hospitals and Care Committees, etc.).
1	Adlington Blackrod Carnforth Chorley (B.) Chorley (R.) Fulwood Garstang (R.), Part of, consisting of parishes of— Barnacre-with-Bonds Billsborrow	Garstang (R.) <i>cont.</i> Bleasdale Cabus Catterall Cloughton Forton Garstang Kirkland Myerscough Nabey Nether Wyresdale Winnarleigh	Horwich Lancaster (B.) Lancaster (R.) Leyland Longridge Lunesdale (R.) Morecambe & Heysham (B.) Preston (R.) Walton-le-Dale Withnell Acreage 296,020	252,621	Dr. G. H. Leigh, Tuberculosis Dispensary, 8 Middle Street, Lancaster. Assistant Tuberculosis Officer— Dr. F. C. S. Bradbury	Nurse L. Walker Nurse F. D. Abbott Nurse G. M. Hunter Nurse J. Skelcher	LANCASTER (Chief), 8 Middle Street (Tel. No. 568). (Artificial Light Apparatus). CHORLEY (Branch), 84 St. Thomas's Road (Tel. No. 2763). (X-ray and Artificial Light Apparatus). PRESTON (Branch), 12 Walton's Parade (Tel. Nos. 2910, and 4868 Ext. 226). (Artificial Light Apparatus).	Monday, 12 noon. Other days and evenings by appointment. Thursday, 12 noon. Other days and evenings by appointment. Wednesday, 11 a.m. Other days and evenings by appointment.
2	Accrington (B.) Bacup (B.) Barrowford Blackburn (R.) Brierfield Burnley (R.) Church	Clayton-le-Moors Clitheroe (B.) Clitheroe (R.) Colne (B.) Darwen (B.) Great Harwood Haslingden (B.) Acreage 177,025	Nelson (B.) Oswaldtwistle Padiham Rawtenstall (B.) Rishton Trawden Turton Acreage 177,025	327,593	Dr. B. MacPhee, Tuberculosis Dispensary, High Lea, 108a Whalley Road, Accrington. Assistant Tuberculosis Officers— Dr. S. C. Adam Dr. J. N. Whyte (2 days per week)	Nurse L. F. Norwood Nurse E. Watterson Nurse M. Duggan Nurse A. Munro Nurse H. M. Alcock Nurse R. Lambert	ACCRINGTON (Chief), High Lea, 108a Whalley Road (Tel. No. 2443). (X-ray and Artificial Light Apparatus). DARWEN (Branch), 20 Railway Road (Tel. No. 408). NELSON (Branch), 64 Carr Road (Tel. No. 507). (Artificial Light Apparatus). STACKSTEADS (Branch), Knott Hill House (Tel. No. Bacup 201). (Artificial Light Apparatus).	Tuesday, 2 p.m.; 5-30 p.m. by appointment. Wednesday, 2 p.m. Thursday, 10 a.m. x-ray exams. Monday, 10 a.m. Tuesday, 2 p.m. Wednesday, 5-30 p.m. by appointment. Friday by appointment. Monday, 2 p.m.; 5-30 p.m. by appointment.
3	Ashton-under-Lyne (B.) Audenshaw Chadderton Crompton Denton Droylsden Failsworth Heywood (B.)	Lees Limehurst (R.) Littleborough Middleton (B.) Milnrow Mossley (B.) Prestwich Radcliffe (B.) Acreage 81,801	Ramsbottom Royton Tottington Wardle Whitefield Whitworth Acreage 81,801	375,047	Dr. G. Fletcher, Tuberculosis Dispensary, Boston House, Warrington Street, Ashton-under-Lyne. Assistant Tuberculosis Officers— Dr. J. L. Armour Dr. W. Fettes	Nurse C. Guilfooy Nurse H. Dewsnap Nurse M. Sherwen Nurse W. Swift Nurse I. F. Macdonald Nurse M. A. Potter Nurse M. A. Potter Nurse A. Flynn Nurse M. Sherwen Nurse W. Swift Nurse W. Swift Nurse H. Dewsnap	ASHTON-UNDER-LYNE (Chief), Boston House, Warrington Street (Tel. No. 1775). (X-ray and Artificial Light Apparatus). CHADDERTON (Branch), Brook Street (Tel. No. Main 1671). MIDDLETON (Branch), 71 Manchester Old Road (Tel. No. 2706). RADCLIFFE (Branch), 41 Darbyshire Street (Tel. No. 2323). (Artificial Light Apparatus). ROCHDALE (Branch), 168 Drake Street (Tel. No. 3892).	Monday, 10-30 a.m. x-ray exams. Tuesday, 11 a.m. for Mossley cases only; 2-30 p.m. Friday, 10 a.m. 1st Tuesday of month, 6-30 p.m. Monday, 2 p.m. Wednesday, 10 a.m. 2nd Monday of month, 6-30 p.m. Friday, 2-30 p.m. 2nd Friday of month, 6-30 p.m. Wednesday, 2 p.m. 3rd Wed. of month, 6-30 p.m. Thursday, 10-30 a.m. 2nd Thurs. of month, 6-30 p.m.
4	Atherton Eccles (B.) Farnworth Golborne Irlam	Kearsley Leigh (B.) Little Lever Stretford (B.) Swinton & Pendlebury (B.) Acreage 54,020	Tyldesley Urmston Westthoughton Worsley Acreage 54,020	366,838	Dr. G. Jessel, Tuberculosis Dispensary, 13 Church Street, Leigh. Assistant Tuberculosis Officers— Dr. A. B. Jamieson Dr. H. J. Villiers	Nurse E. M. Crone Nurse M. B. Jones Nurse M. Gibson Nurse H. M. Shakespeare Nurse F. G. Smith Nurse A. Dickinson Nurse K. Blakemore	LEIGH (Chief), 13 Church Street (Tel. No. 258). ECCLES (Branch), 28 and 30 Gilda Brook Road (Tel. No. 3533). (X-ray and Artificial Light Apparatus). FARNWORTH (Branch), 19-23 Darley Street (Tel. No. 63). PENDLEBURY (Branch), 121 Station Road (Tel. No. Swinton 1895). STRETTFORD (Branch), 14 Derbyshire Lane (Tel. No. Longford 2010).	Wednesday, 9-30 a.m. Friday, 9-30 a.m. 2nd Thurs. of month, 6-30 p.m. Tuesday, 2 p.m.; 2-30 p.m. x-ray examinations. Thurs., 2-30 p.m. x-ray exams. Friday, 9-30 a.m. 1st Wed. of month, 6-30 p.m. Tuesday, 9-30 a.m. Friday, 2 p.m. 3rd Thurs. of month, 6-30 p.m. Monday, 2 p.m. Last Thurs. of month, 6-30 p.m. Tuesday, 9-30 a.m. Thursday, 9-30 a.m. Last Monday of month, 6-30 p.m.
5	Formby Great Crosby* Haydock Huyton-with-Roby Litherland *Amalgamated as Crosby (Borough) from 1st November, 1937.	Newton-in-Makerfield Ormskirk Prescot Rainford Skelmersdale Acreage 160,315	Warrington (R.) Waterloo-with-Seaforth* West Lancashire (R.) Whiston (R.) Widnes (B.) Acreage 160,315	285,199	Dr. C. W. Laird, Tuberculosis Dispensary, 7 Claremont Road, Seaforth. Assistant Tuberculosis Officers— Dr. C. Berry Dr. J. N. Whyte (2 days per week)	Nurse M. J. McKeown Nurse I. M. Corfield Nurse E. Walsh Nurse L. Farquhar Nurse M. J. Wilson	SEAFORTH (Chief), 7 Claremont Road (Tel. No. Waterloo 688). (X-ray Apparatus). ST. HELENS (Branch), 90 Hardshaw Street (Tel. No. 3916). (Artificial Light Apparatus). WIDNES (Branch), Brendan House, Widnes Road (Tel. No. 2156).	Monday, 2-30 to 4-30 p.m. Wed. afternoon by appointment. Thurs., 10 a.m. x-ray exams. Friday, 10 to 11-30 a.m. 3rd Thursday of month, 6 p.m. Tuesday, 2-30 to 4-30 p.m. Last Tues. of month, 6 to 7 p.m. Monday, 10 to 11-30 a.m. Friday, 2 to 4 p.m. 1st Wed. of month, 6 to 7 p.m.
Furness	Dalton-in-Furness Grange-over-Sands	Ulverston	Ulverston (R.) Acreage 140,549	38,022	Dr. G. Leggat, High Carley Sanatorium, near Ulverston (Tel. No. Ulverston 110).	Nurse E. A. Duston	ULVERSTON, 69 Albion Place, Lightburn Avenue (Tel. No. 145). (Artificial Light Apparatus). (X-ray Apparatus at High Carley Sanatorium).	Tuesday, 10 a.m. Thursday, 10 a.m.
Fylde	Fleetwood (B.) Fylde (R.) Garstang (R.), Part of, consisting of parishes of— Great Eccleston Hambleton	Garstang (R.) <i>cont.</i> Inskip-with-Sowerby Out Rawcliffe Pilling Stalmine-with-Stainall Upper Rawcliffe Acreage 74,441	Kirkham Lytham St. Annes (B.) Poulton-le-Fylde Preesall Thornton Clevcleys Acreage 74,441	88,170	Dr. G. B. Charnock, Elswick Sanatorium, near Kirkham. Assistant Tuberculosis Officer— Dr. J. N. Whyte (1½ days per week)	Nurse A. Twéedy	FLEETWOOD, 23 Poulton Road (Tel. No. 282). (Artificial Light Apparatus). ELSWICK Sanatorium, near Kirkham (Tel. No. Great Eccleston 22). (X-ray Apparatus).	Tuesday, 9 a.m. Wednesday, 10 a.m. by appointment.
Wigan County	Abram Ashton-in-Makerfield Aspull Billinge and Winstanley	Hindley Ince-in-Makerfield Orrell Standish-with-Langtree Acreage, 40,950	Upholland Wigan (R.) Acreage, 40,950	109,410	Dr. E. H. A. Pask, Wrightington Hospital, Appley Bridge, near Wigan (Tel. No. Appley Bridge 338). Assistant Tuberculosis Officer— Dr. E. H. W. Deane	Nurse E. Walters Nurse M. J. Evans	WIGAN, 3 Mesnes Park Terrace (Tel. No. 3172). (Artificial Light Apparatus). (X-ray Apparatus at Wrightington Hospital).	Monday, 9-30 a.m. Thursday, 9-30 a.m. 4th Thurs. of month, 6-30 p.m.
Total acreage of Admin. County				1,088,130	1,842,900			

STATISTICS REQUIRED BY MINISTRY OF HEALTH.

By Memorandum 37/T (Revised), issued in October, 1930, the Ministry require certain information concerning the work done at tuberculosis dispensaries. These statistics, in the compulsory Table A of the Memorandum, are given in Appendix V of this report.

A comparison with the English counties and England (all areas) is contained in Table 11, page 35.

RECOVERED CASES.

Since 1926 the Ministry of Health have allowed cases of pulmonary tuberculosis to be written off the dispensary registers as recovered, provided the disease has been quiescent for two years and arrested for a further three years. During 1936, 195 pulmonary cases were written off the registers as recovered; of these, 22 were classified as T.B. plus 1, 34 as T.B. plus 2, and 2 as T.B. plus 3.

In regard to non-pulmonary tuberculosis, cases may be written off the registers as recovered if arrest of the disease has been maintained for at least three years. During 1936, 458 non-pulmonary cases were so written off.

On the other hand, in 1936, 52 cases were restored to the registers after having been written off as recovered in previous years; 17 of these were pulmonary cases when originally on the registers (3 being classified as T.B. plus), and 35 were non-pulmonary.

SUMMARY OF DISPENSARY WORK DONE BY TUBERCULOSIS OFFICERS IN 1936, SHOWING COMPARISON WITH 1935.

VISITS BY TUBERCULOSIS OFFICERS TO PATIENTS' HOMES—	1935	1936
(a) Number of new persons (including new contacts) examined for diagnosis or expert opinion	1,105	1,041
(b) Number of re-examinations of "old" cases and "old" contacts—		
1. Respecting continued general supervision or dispensary treatment	3,167	3,087
2. Contacts respecting diagnosis	9	6
3. Other cases respecting diagnosis	206	143
4. For special forms of treatment or examinations resulting therefrom—		
Aspirations... ..	12	7
Adjustment of splints and surgical appliances	239	268
Lupus cases	53	45
Pneumothorax (refills)	1	3
Tuberculin	—	1
Mantoux tests	10	27
Blood sedimentation tests	1	—
Other forms	1	—
	<hr/> 4,804	<hr/> 4,628

DISPENSARY ATTENDANCES BY PATIENTS—						1935	1936
(a) Number of new persons (including new contacts) examined for diagnosis or expert opinion						4,103	4,476
(b) Number of re-examinations of "old" cases and "old" contacts—							
1. Respecting continued general supervision or dispensary treatment						12,176	12,294
2. Contacts respecting diagnosis						279	286
3. Other cases respecting diagnosis						2,207	2,453
4. For special forms of treatment or examinations resulting therefrom—							
Artificial light (Lancaster, Chorley, Preston, Accrington, Nelson, Stacksteads, Ashton-under-Lyne, Radcliffe, Eccles, St. Helens, Wigan, Ulverston and Fleetwood Dispensaries)						26,323	25,640
Aspirations						107	124
Adjustment of splints and surgical appliances						834	824
Lupus cases						568	525
Pneumothorax (refills)						2,233	2,291
Tuberculin						487	512
Hydnocarpates						213	322
Mantoux tests						208	251
Blood sedimentation tests						360	333
Other forms						38	63
						<u>50,136</u>	<u>50,394</u>
X-RAY EXAMINATIONS MADE AT COUNTY DISPENSARIES AND INSTITUTIONS—							
(a) Dispensary patients						10,024	10,469
(b) Institutional patients... ..						9,228	9,805
						<u>19,252</u>	<u>20,274</u>
EXAMINATIONS OF SPUTUM AT COUNTY DISPENSARIES						6,767	7,053
NUMBER OF RECOMMENDATIONS BY TUBERCULOSIS OFFICERS—							
1. Sanatorium or hospital treatment						1,558	1,651
2. Dispensary treatment or general supervision						9,086	8,717
3. Provision of special nourishment						2,092	1,681
4. Provision of surgical appliances						152	140
5. Loan of shelters						18	12
6. Diagnosis not confirmed—							
(a) Notified cases						106	107
(b) Non-notified cases						2	3
7. Cases written off the register as refusing treatment						17	20
8. Pulmonary cases written off the register as recovered						169	195
9. Non-pulmonary cases written off the register as recovered						556	458
CARE COMMITTEE MEETINGS ATTENDED BY—							
(a) Tuberculosis officers						75	74
(b) Tuberculosis health visitors						135	133
LECTURES OR ADDRESSES GIVEN ON TUBERCULOSIS						10	16
CONSULTATIONS WITH MEDICAL PRACTITIONERS—							
Personal						618	606
Other						5,404	6,435
VISITS BY TUBERCULOSIS OFFICERS TO SANATORIA, AND PULMONARY, SPECIAL, AND PUBLIC ASSISTANCE HOSPITALS						309	365
SPECIAL VISITS BY TUBERCULOSIS OFFICERS (<i>i.e.</i> , interviews with medical officers of health, general hospital officials, &c.)						48	63
EXAMINATIONS OF ENTRANTS TO INDUSTRY UNDER SANDSTONE INDUSTRY (SILICOSIS) SCHEME, 1929						38	95

VISITS BY DISPENSARY NURSES TO PATIENTS' HOMES—

	1935	1936
Routine visits	35,606	37,395
Application of surgical dressings... ..	1,692	1,661
Adjustment of splints and surgical appliances	1,588	1,761
Other actual nursing	937	1,234
	<u>39,823</u>	<u>42,051</u>

PATIENTS' DISPENSARY ATTENDANCES FOR ATTENTION
BY NURSES—

Application of surgical dressings... ..	2,499	2,920
Adjustment of splints and surgical appliances	264	259
	<u>2,763</u>	<u>3,179</u>

Percentage of new cases referred by medical practitioners, etc.,
to tuberculosis officers for an opinion as to diagnosis or
treatment *before statutory notification* 91% 92%

XI.—TREATMENT OF TUBERCULOSIS BY ARTIFICIAL LIGHT.

PRESENT POSITION OF THE COUNTY SCHEME.

Commencing with two experimental light centres in 1925, the County scheme has been extended, and the following table shows the 13 centres which have been established at County tuberculosis dispensaries, the date opened, and the lamp equipment :—

TABLE 15.

Dispensary area.	Dispensary at which light centre established.	Date light centre opened.	Lamp equipment.
No. 1 ...	Lancaster ...	15/7/25	1 "Sunrae" carbon arc. 1 Kromayer mercury vapour. 1 Hanovia mercury vapour.
	Chorley ...	14/10/26	2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Preston ...	29/11/27	2 "Sunrae" carbon arcs. 1 "Alpine Sun" carbon arc. 1 Tungsten arc. 1 Kromayer mercury vapour. 1 Jesionek mercury vapour.
No. 2 ...	Accrington ...	26/1/32	2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Nelson ...	20/11/28	2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Stacksteads ...	9/1/28	2 Jesionek mercury vapour. 1 Kromayer mercury vapour. 1 "Sunic" mercury vapour.
No. 3 ...	Ashton-under-Lyne	11/9/25	2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Radcliffe ...	20/7/28	1 Sollux luminous heat ray. 2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
No. 4 ...	Eccles ...	1/12/27	1 Sollux luminous heat ray. 2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
No. 5 ...	St. Helens ...	16/1/28	1 Murray-Levick infra-red. 2 "Sunrae" carbon arcs. 1 Kromayer mercury vapour.
Furness ...	Ulverston ...	5/6/28	2 "Sunrae" carbon arcs. 1 Kromayer mercury vapour.
Fylde ...	Fleetwood ...	25/6/28	2 "Sunrae" carbon arcs. 1 Kromayer mercury vapour.
Wigan County	Wigan ...	31/5/29	2 "Sunrae" carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.

The treatment of the patients has been carried out under the direct supervision of the consultant tuberculosis officer of each dispensary area and by the medical and nursing staffs under him.

RESULTS OF TREATMENT.

Tables, showing the results of treatment at each light centre, have been received from the consultant tuberculosis officers of the dispensary areas and summarised in the following form, which represents the work done at the 13 centres during the year 1936 :—

TABLE 16.

Form of tuberculosis or part of body affected.	Number of cases on treat- ment on 1-1-36.	Number of cases commenc- ing treat- ment in 1936.	Condition of patients whose treatment concluded in 1936.				Ceased treat- ment for other reasons. *	Still under treat- ment at end of 1936.	
			Quiescent and apparent- ly well.§	Improved.	Station- ary.	Worse.			
Skin	98	49	23	12	2	—	23	87	
Adenitis with abscess formation and skin involvement ...	100	158	109	7	3	1	20	118	
Adenitis without softening ...	72	133	81	6	1	—	29	88	
Bones, joints, and spine ...	7	7	4	1	1	—	3	5	
Abdomen	3	19	2	—	—	—	7	13	
Other non-pulmonary conditions	3	8	1	2	—	—	2	6	
Lungs—sputum negative ...	—	2	—	—	—	—	—	2	
Bronchial glands	1	—	1	—	—	—	—	—	
Pulmonary and non-pulmonary combined	1	1	—	—	—	—	—	2	
Total for 1936	285	377	662 †	221	28	7	1	84	321
For comparison, the total in 1935 was	295	335	630 ‡	225	32	12	3	73	285

* Includes: (1) Patients who did not receive two months' treatment; (2) patients ceasing light treatment prematurely (*e.g.*, removals, unwilling or unable to continue); and (3) patients transferred to sanatoria or hospitals.

† Adults, 310; children, 352. ‡ Adults, 303; children, 327.

§ The term "quiescent and apparently well" has been chosen to express the condition of a lesion which has been healed by artificial light treatment. By direction of the Ministry of Health no case of non-pulmonary tuberculosis is written off the tuberculosis register as "recovered" until three years have elapsed without any signs or symptoms of active disease.

The results of treatment of cases of non-pulmonary tuberculosis in 1936 may be considered satisfactory, particularly for three groups of cases, namely: (i) Adenitis with abscess formation and skin involvement, (ii) adenitis without softening, and (iii) skin. Conditions (i) and (iii) are usually refractory to other forms of treatment.

The average gain in weight of the 221 patients who became "quiescent and apparently well" was as follows:—Adults 4.01 lbs.; children 7.10 lbs.

The degree of pigmentation attained in these 221 patients was: Deep 49, medium 51, light 70, none 51.

During 1936, 37 patients, who had ceased treatment in a previous year with the disease quiescent and apparently well, relapsed and returned for further treatment; the classification of these cases was as follows:—Skin, 10; adenitis with abscess formation and skin involvement, 18; adenitis without softening, 7; bones and joints, 1; and abdomen, 1.

In addition to the 662 active cases dealt with in Table 16, there were 15 non-pulmonary cases whose condition was quiescent on commencing light treatment. The object of treatment was to prevent a possible recurrence of active disease.

AVERAGE DURATION OF TREATMENT.

The duration of treatment has varied widely according to the type of non-pulmonary disease. Taking several groups of cases in which the disease has become quiescent and apparently well the average duration is as given in the following Table 17:—

Form of tuberculosis or part of body affected.	Number of cases (active on commencing light treatment) who became "quiescent and apparently well."	Average duration of light treatment.	<i>For comparison</i> : Average duration of disease <i>before</i> commencing light treatment.
Skin	23	Months. 30·55	Months. 90·91
Adenitis with abscess formation and skin involvement	109	8·79	16·43
Adenitis without softening	81	10·24	15·37
Bones, joints, and spine	4	15·81	55·50
Abdomen... ..	2	3·50	3·50
Other non-pulmonary conditions	1	48·00	58·00
Bronchial glands	1	8·00	48·00

ATTENDANCE OF PATIENTS.

The frequency of attendance of patients depends on several factors, but at seven of the centres the great majority of patients attend twice per week, at five centres thrice per week, and at one centre four times per week. Evening sessions are held for the convenience of those patients who are at work and unable to attend the centres during the day.

Of the total patients attending during the year, 83 per cent. were able to continue their normal occupation during the course of treatment ; 35 per cent. were assisted by the payment of railway, bus or tram fares to and from the centres.

During 1936, the attendances of patients at the 13 dispensary light centres numbered 25,640.

PHOTOGRAPHIC RECORDS.

In order to record the progress made by patients, photographs have been taken of a number of cases treated by light—at commencement, during the course of treatment, and on termination.

XII.—THE TREATMENT OF PULMONARY TUBERCULOSIS IN RESIDENTIAL INSTITUTIONS.

The most expensive part of a tuberculosis scheme is the cost of maintaining patients in sanatoria or hospitals. The practice of the tuberculosis medical staff has always been conservative in regard to diagnosis, particularly in children, and every opportunity has been taken to adopt up-to-date methods of diagnosis. For this purpose the County Council have allowed their senior medical staff to attend post-graduate courses and to undertake research.

A very thorough examination at the dispensary, and especially the use there of a good x-ray plant ensures that only cases with definite tuberculosis are taken on the register and afforded treatment. This saves a considerable amount of public money by reducing the number of beds required for the treatment of patients.

As regards pulmonary adults, should tuberculosis institutions treat separately or on the same site the observation, the early, the chronic, and the acute case? The problem of dealing with the tuberculous—and more particularly the chronic tuberculous—patient cannot be decided on the basis of a separation of what may be called good and bad cases. The superintendent of an isolated sanatorium is always wishing to have his institution cleared of chronic and advanced cases. While very understandable, this does not help in the prevention and treatment of tuberculosis as a whole. Experience has shown that, by the use of x-rays and minor collapse therapy in tuberculosis institutions—not too big, situated near the patients' homes, superintended or attended by the tuberculosis officer, and taking all types of pulmonary cases—prevention and treatment go hand in hand, and the title given to the institution—hospital or sanatorium—is of little importance.

I believe then that tuberculosis institutions for pulmonary disease should treat on one and the same site the good, the bad, and the intermediate case, and treatment will often have to be of long duration.

Arrangements for the institutional treatment of pulmonary children (up to 15 years of age) require careful consideration, and such patients should be divided into three categories and dealt with in institutions as follows :—

- Class 1. Children with positive sputum (indicating the adult type of pulmonary tuberculosis): should be provided with separate accommodation at institutions for adult pulmonary cases.
- Class 2. Children with negative or no sputum: should be treated at sanatorium schools.
- Class 3. Children with indefinite symptoms, generally known as the pre-tuberculous type: should attend open-air schools provided by the local education authority.

The conservative attitude adopted in diagnosing adults and children suspected to be suffering from pulmonary tuberculosis is evident from the proportion (34·7 per cent.) of pulmonary cases on the dispensary registers classified as T.B. minus. In contrast six large counties, with a population in the region of a million, show an average percentage of 48·2 T.B. minus cases; for the whole of England, the proportion was 49·8.

A further factor seriously affecting the number of beds required is the duration of treatment allowed to a patient. Here again every case has to be carefully weighed on its merits, but generally the following principles have been adopted:—

(a) Patients who are responding to institutional treatment are given a prolonged stay (6 months and over) so long as there is a likelihood of the disease becoming quiescent. To return such cases to their homes and to work before attaining quiescence is uneconomical because of the danger of the patient breaking down and all the good of institutional treatment being wasted.

(b) Patients, particularly the young adult group (aged 15–25), who have been given special forms of treatment (*e.g.*, artificial pneumothorax, phrenicectomy, thoracoplasty, sanocrysin) are allowed a sufficient stay (say, up to 6 months) to show progress from their treatment and are retained up to 12 months or more if their condition warrants it; cases treated by artificial pneumothorax attend at the dispensaries for a continuation of their treatment.

(c) Patients whose sputum has never been positive and who are not likely to make further progress or to require special treatment are allowed to return home at the end of two or three months' treatment. Many sputum examinations are made in this type of case and the usual practice is to make three tests of consecutive daily specimens.

(d) Patients with positive sputum who are not likely to make further progress and whose home conditions are reasonably satisfactory are allowed to return home at the end of two or three months' treatment.

The tuberculosis officers when making recommendations for institutional treatment bear in mind the following questions: (1) Is institutional treatment required to improve the patient's health? (2) Is institutional treatment desirable to secure nursing care which cannot be otherwise obtained at home? (3) Is institutional treatment necessary to prevent the spread of infection?

All the patients in sanatoria and hospitals receive the benefit of and training in hygiene which is advantageous to themselves and a protection to others when they return home.

IMMEDIATE RESULTS OF INSTITUTIONAL TREATMENT.

The following Table 18 summarises the *immediate* results of treatment of patients discharged in 1936 from sanatoria and pulmonary hospitals :—

Classification on admission to the institution.	Condition at time of discharge.	Duration of residential treatment in the institution.															Total patients discharged.	
		Under 28 days.			1—3 months.			3—6 months.			6—12 months.			More than 12 months.				
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	No.	%
T.B. minus.	Quiescent	—	—	—	5	7	—	17	23	3	8	14	7	3	1	5	93	43·7
	Improved	3	2	—	12	9	—	24	17	1	6	7	3	2	3	—	89	41·8
	N.M.I. ...	4	4	1	—	2	1	3	1	—	—	—	1	—	1	—	18	8·4
	Died ...	2	—	—	5	1	—	1	—	—	3	—	—	1	—	—	13	6·1
T.B. plus 1 (early).	Quiescent	—	1	—	1	1	1	4	4	—	9	4	1	4	2	—	32	26·2
	Improved	3	2	—	7	4	—	13	5	—	7	14	—	2	3	—	60	49·2
	N.M.I. ...	—	1	—	3	2	—	2	1	—	—	—	—	1	2	—	12	9·8
	Died ...	1	1	—	5	2	—	1	—	—	1	2	—	4	1	—	18	14·8
T.B. plus 2 (intermediate).	Quiescent	1	1	—	—	2	1	10	8	—	9	10	—	4	6	2	54	8·4
	Improved	3	—	—	30	17	—	65	36	—	56	51	—	35	17	1	311	48·6
	N.M.I. ...	15	9	1	24	13	1	17	15	—	25	15	—	6	10	—	151	23·6
	Died ...	18	4	—	21	15	—	15	15	—	10	6	—	11	9	—	124	19·4
T.B. plus 3 (advanced).	Quiescent	—	—	—	—	—	—	—	—	—	4	1	—	2	—	1	8	4·4
	Improved	—	—	—	10	4	—	8	5	—	13	7	—	7	2	1	57	31·1
	N.M.I. ...	3	2	—	10	3	1	6	5	—	5	8	—	1	1	1	46	25·1
	Died ...	15	7	—	14	11	1	6	3	—	2	5	—	5	3	—	72	39·3
	Total ...	68	34	2	147	93	6	192	138	4	158	144	12	88	61	11	1158	—
Diagnosis on discharge from observation.											Stay under 4 weeks.			Stay over 4 weeks.				
Tuberculous ...											3	3	3	17	2	4	32	35·9
Non-tuberculous ...											9	4	—	14	11	8	46	51·7
Doubtful ...											3	1	2	2	—	1	9	10·1
Died ...											*1	—	—	†1	—	—	2	2·2
GRAND TOTAL ...																	1,247	

N.M.I. = No material improvement. "Died" comprises deaths in the institution only.

* Cause of death : Hæmoptysis, pulmonary abscess and pneumonia.

† Cause of death : Annular fibrillation, mitral stenosis and rheumatic fever.

The table illustrates that better results are achieved when institutional treatment is given before the sputum becomes positive ; further, the more advanced the disease the less satisfactory are the results.

The following Table 19 shows the names of the sanatoria and pulmonary hospitals and the number of patients suffering from pulmonary tuberculosis admitted and discharged during 1936 :—

Institution.	Definite cases.			Observation cases.		
	Ad-missions.	Dis-charges.	Deaths.	Ad-missions.	Dis-charges.	Deaths.
Aitken Sanatorium, near Bury	69	44	19	1	1	—
Barrowmore Tuberculosis Sanatorium and Settlement, Great Barrow, Chester ...	58	50	8	—	—	—
Chadderton Pulmonary Hospital, near Oldham ...	34	24	11	1	1	—
Eastby Sanatorium, near Skipton	14	10	—	8	6	—
Eccleston Hall Sanatorium, St. Helens	22	10	8	1	1	—
Elswick Sanatorium, near Kirkham	122	106	17	16	16	—
Halifax Sanatorium, Shelf	19	18	2	—	—	—
Heath Charnock Pulmonary Hospital, near Chorley	60	43	19	1	1	—
Hefferston Grange Sanatorium, Weaverham, Cheshire	7	7	1	—	—	—
High Carley Sanatorium, near Ulverston ...	167	155	13	30	28	2
King Edward VII Sanatorium, Midhurst, Sussex	7	5	—	—	1	—
Lancaster Pulmonary Hospital	80	54	26	—	—	—
Oubas House Children's Sanatorium, Ulverston...	10	10	—	12	11	—
Peel Hall Pulmonary Hospital, Little Hulton ...	96	75	19	2	3	—
Pemberton Pulmonary Hospital, Wigan ...	5	5	—	—	—	—
Rufford Pulmonary Hospital, near Ormskirk ...	104	86	16	2	2	—
Springfield Sanatorium, Rochdale... ..	41	34	7	—	—	—
Westmorland Sanatorium, Meathop, Grange-over-Sands	10	10	—	—	—	—
Wilkinson Sanatorium, near Bolton	31	16	4	1	—	—
Withnell Pulmonary Hospital, near Chorley ...	92	66	27	13	10	—
Wolstenholme Pulmonary Hospital, Norden, Rochdale	72	51	18	6	6	—
Wrightington Hospital, near Wigan	44	33	11	—	—	—
Other sanatoria and hospitals	21	19	1	—	—	—
TOTAL	1,185	931	227	94	87	2

In each of the five large dispensary areas, there is a pulmonary hospital in the charge of the consultant tuberculosis officer, an arrangement of the highest importance because patients come to these hospitals from the area administered by the tuberculosis officer, who is, therefore, conversant with the home conditions. Further, it is of great advantage to the tuberculosis officer, because he can himself apply certain forms of treatment and carry out valuable clinical and research work.

A number of patients are also accommodated in pulmonary hospitals belonging to other bodies situated in or near the area. Arrangements have been made (with minor exceptions) for the tuberculosis officers to visit periodically these institutions and confer with the medical superintendents on the following matters :—

1. The question of extension of patients' treatment or their return home, having special regard to the home conditions which are known to the tuberculosis officers.
2. The special consideration of any patient who is not responding to treatment at the institution.
3. The question of the patients' future treatment, including the facilities for treatment at home.
4. Applications from patients for transfer to other institutions, or for their discharge home, and to settle, where possible, any difficulties or complaints by patients.
5. The question of ancillary treatment, *e.g.*, dental.

The foregoing working arrangements have enabled the highly infectious cases with unsatisfactory home conditions to remain at the pulmonary hospitals for long periods for the purpose of isolation, and it is always possible for patients who have made good progress and are capable of light work to be transferred to sanatoria for the continuation of their treatment.

AFTER-HISTORIES OF ADULT PATIENTS SUFFERING FROM PULMONARY TUBERCULOSIS.

In my report for 1933, the after-histories of adult pulmonary patients who came on the dispensary registers during the years 1920, 1925, and 1930 were recorded. As there will be very little change in the results, the after-histories have not been worked out again this year.

As a matter of interest, now that several years have elapsed since the operation of phrenicectomy was first performed in County institutions, the following after-histories are given of 72 such cases treated in 1933.

After-Histories of 72 Patients upon whom the operation of Phrenicectomy was performed.

During 1933, the operation of phrenicectomy was performed on 72 patients in three County institutions (High Carley Sanatorium, Elswick Sanatorium, and Peel Hall Pulmonary Hospital). The

following Table 20 shows the position of these patients at the end of 1936—three years later :—

Classification.	High Carley Sanatorium.	Elswick Sanatorium.	*Peel Hall Pulmonary Hospital.	*Total.
T.B. minus—				
Quiescent	2	3	—	5
Active	1	—	—	1
Dead	—	—	—	—
T.B. plus 1—				
Quiescent	5	—	—	5
Active	2	2	1	5
Dead	4	—	—	4
T.B. plus 2—				
Quiescent	5	2	2	9
Active	4	3	4	11
Dead	8	12	8	28
T.B. plus 3—				
Quiescent	—	—	—	—
Active	—	2	—	2
Dead	—	—	1	1
Total—				
Quiescent	12	5	2	19
Active	7	7	5	19
Dead	12	12	9	33

* Excludes one case (T.B. plus 2) which removed and could not be traced.

These were selected cases not making progress by normal sanatorium treatment, and on account of the relatively small number no conclusions can for the moment be drawn.

Thoracoplasty Cases.

Insufficient time has elapsed to give the after-histories of patients who have received this form of major operative treatment.

XIII.—THE TREATMENT OF NON-PULMONARY TUBERCULOSIS.

IMMEDIATE RESULTS OF INSTITUTIONAL TREATMENT AT GENERAL AND SPECIAL HOSPITALS.

A summary of the condition on discharge of patients treated during 1936 in approved general and special hospitals is given in the following Table 21 :—

Classification on admission to the institution.	Condition at time of discharge.	Duration of residential treatment in the institution.															Total patients discharged	
		Under 28 days.			1—3 months.			3—6 months.			6—12 months.			More than 12 months.			No.	%
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.		
Bones and joints.	Quiescent ...	—	1	—	4	4	7	3	4	4	4	4	11	8	6	42	102	45·11
	Improved ...	5	9	1	9	6	6	3	6	5	5	4	4	6	2	9	80	35·44
	N.M.I. ...	4	2	7	2	1	4	—	—	1	2	3	—	2	1	1	30	13·33
	Died ...	—	—	—	2	—	—	1	—	—	3	3	—	2	2	1	14	6·22
Abdominal.	Quiescent ...	—	—	—	3	6	4	—	1	2	—	—	2	—	—	—	18	39·11
	Improved ...	2	3	1	3	2	2	—	1	1	—	—	—	—	—	2	17	36·9
	N.M.I. ...	—	—	2	—	1	1	—	—	—	1	—	—	—	—	—	5	10·9
	Died ...	—	1	2	1	—	1	—	—	—	—	—	—	—	—	—	6	13·0
Other organs.	Quiescent ...	3	1	—	3	2	—	2	1	1	3	—	1	1	—	—	18	29·0
	Improved ...	10	6	1	5	2	—	—	1	—	3	1	—	—	1	1	31	50·0
	N.M.I. ...	2	1	—	2	—	1	—	—	—	—	—	—	—	—	—	6	9·7
	Died ...	1	—	2	1	—	—	—	—	—	1	2	—	—	—	—	7	11·3
Peripheral glands.	Quiescent ...	1	4	3	2	2	14	2	—	2	—	1	3	—	—	3	37	32·7
	Improved ...	7	22	20	—	5	5	—	2	6	1	2	—	—	—	1	71	62·8
	N.M.I. ...	1	1	—	—	—	1	—	—	—	—	—	—	—	1	—	4	3·5
	Died ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	0·9
Total		36	51	39	37	31	46	11	16	22	24	20	21	19	14	60	447	—
Diagnosis on discharge from observation.										Stay under 4 weeks.			Stay over 4 weeks.					
Tuberculous ...										—			—			19		
Non-tuberculous ...										2			2			20		
Doubtful ...										1			2			5		
Died ...										—			*1			1		

GRAND TOTAL ... 492

N.M.I. = No material improvement. "Died" comprises deaths in the institution only.
 * Cause of death : Toxæmia due to streptococcal tonsillitis ; lung abscess.

The following Table 22 shows the names of the general and special hospitals, and the number of patients suffering from non-pulmonary tuberculosis admitted and discharged during 1936 :—

Institution.	Definite cases.			Observation cases.		
	Ad-missions.	Dis-charges.	Deaths.	Ad-missions.	Dis-charges.	Deaths.
Ashton-under-Lyne District Infirmary	13	11	—	1	1	—
Barrowmore Tuberculosis Sanatorium and Settlement, Great Barrow, Chester	6	2	—	—	—	—
Blackburn and East Lancashire Royal Infirmary	14	14	—	—	—	—
Bolton Infirmary	5	4	1	—	—	—
Bootle Borough Hospital.. .. .	3	3	—	—	—	—
Bury Infirmary	7	7	—	—	—	—
David Lewis Northern Hospital, Liverpool ..	4	3	—	—	—	—
Eastby Sanatorium, near Skipton	5	4	—	—	—	—
Liverpool Open-Air Hospital, Leasowe, Cheshire	14	17	1	1	—	—
Liverpool Royal Infirmary	6	3	2	1	1	—
Liverpool Stanley Hospital	6	6	—	1	1	—
Manchester Royal Infirmary	27	26	—	3	3	—
Manchester & Salford Hospital for Skin Diseases, Manchester	6	4	—	1	1	—
Ormskirk General Hospital	5	3	2	1	1	—
Oubas House Children's Sanatorium, Ulverston	4	4	—	—	—	—
Preston Royal Infirmary	12	13	—	2	1	1
Robert Jones and Agnes Hunt Orthopædic Hospital, Oswestry	10	13	—	—	—	—
Royal Albert Edward Infirmary, Wigan.. ..	10	9	1	1	1	—
Royal Lancaster Infirmary	7	7	—	—	—	—
Royal Liverpool Children's Hospital—Heswall, Cheshire	11	11	—	1	2	—
Myrtle Street, Liverpool	5	6	—	—	—	—
Royal Manchester Children's Hospital, Pendlebury	7	6	—	1	1	—
Warrington Infirmary	10	11	—	—	—	—
Wrightington Hospital, near Wigan	237	216	21	30	31	—
Other general and special hospitals	12	16	—	—	—	—
TOTAL	446	419	28	44	44	1

AFTER-HISTORIES OF PATIENTS SUFFERING FROM NON-PULMONARY TUBERCULOSIS.

In my report for 1933, the after-histories of adults and children first treated during the years 1920, 1925, and 1930 were recorded. It was found that roughly three-quarters of the adults and children had recovered from their non-pulmonary condition or arrived at a stage with the disease arrested or quiescent. As there will be very little change in the results, the after-histories have not been investigated again in detail this year.

XIV.—DISPENSARY AREA No. 1
(including Lancaster Pulmonary Hospital).

Area (estimated population 252,621) embraces Lancaster, Morecambe and Heysham, Garstang Rural (part), Preston Rural, Walton-le-Dale, Chorley, and Horwich districts.

Consultant Tuberculosis Officer ... **DR. G. H. LEIGH.**
(Dr. Leigh is also visiting physician to the Lancaster Pulmonary Hospital).

Assistant Tuberculosis Officer ... **DR. F. C. S. BRADBURY.**

Dr. Leigh reports as follows :—

The number of cases on the dispensary register at the end of the year was 885 as against 845 at the commencement of the year. The examinations number about the same as last year, but a few more cases have been seen at the dispensary and a few less visited at home. The percentage of cases referred before notification remains satisfactory, the figure for 1936 being 94 per cent.

The Mantoux and blood sedimentation tests have again been found useful in diagnosis.

The two sets of x-ray apparatus are doing good work, and the advantage of patients being able to have x-rays taken and pneumothorax treatment continued at Chorley Dispensary, as mentioned in the last annual report, has been fully realised.

The care committees at Lancaster, Chorley, and Horwich are still working hard, and an account of their work is given in another part of the report. At the annual meeting of the Chorley Care Committee, Dr. G. Barker Charnock gave an interesting address on "Radiation in Tuberculosis."

The co-operation with the Royal Lancaster Infirmary with regard to the treatment of tuberculous persons has continued. Two cases of therapeutic abortion received treatment from the honorary gynæcologist.

There has been no alteration in the arrangements for light treatment. More individual patients have been treated, but the total number of attendances is slightly less. At Lancaster and Chorley the attendances are twice a week and at Preston three times a week. Most of the cases have derived considerable benefit.

Most of the new cases come to the knowledge of the tuberculosis officer by reference from their medical attendants; there are, however, a small proportion which are first heard of through the school medical officers, medical staff of infirmaries, and by transfer from another authority.

There are still a few doctors who think they cannot refer a case to the tuberculosis officer without first signing a formal notification, but this is not so ; on the contrary, we are always glad to see cases before notification. One advantage in referring patients before formal notification is that in a doubtful case the notification may sometimes be postponed or even avoided. This is to the patient's benefit, for it is always a disadvantage to anyone to be notified as a case of infectious disease.

The method adopted by most practitioners now is to let the department know that there is a case to be examined and whether the patient is able to attend the dispensary ; a short history of the case is appreciated especially if the diagnosis is more than usually difficult. The message is usually sent by letter, but where the chief dispensary is within easy telephone reach a telephone message will serve the purpose. An appointment can then be made for the examination of the patient. Often the sputum examination can be arranged before the patient is seen, and this saves time in the completion of the report. A patient can of course be sent on one of the dispensary days, but it is much better for the doctor to arrange beforehand for a special appointment as this avoids congestion of the dispensary session.

I should like to take this opportunity of thanking my colleagues and to express appreciation of their kind co-operation.

LANCASTER PULMONARY HOSPITAL.
Matron MISS L. CLARK.

The Lancaster Isolation Hospital, built to replace the Luneside Hospital which was closed in October, 1927, is situated on the northern boundary of the Borough of Lancaster. Building operations were commenced by the Lancaster and District Joint Hospital Board in July, 1932, and the first tuberculous patient was admitted on the 11th February, 1935.

By agreement between the Lancashire County Council and the Joint Hospital Board, a separate block was provided for patients suffering from pulmonary tuberculosis. The building contains a duty room, dining-room, scullery-server, stores, x-ray room, treatment room, staff lavatory, dark room, and dispensary in the centre ; three single and six double cubicles accommodating 15 male patients, with recreation room and sanitary annexe on the east side ; and three single and six double cubicles accommodating 15 female patients, with recreation room and sanitary annexe on the west side. There are also two double sleeping shelters for male patients and one double shelter for females,

making a total accommodation for 36 patients (19 males and 17 females). The Joint Hospital Board are responsible for the maintenance and nursing of the tuberculous patients, the County Council paying to them the cost thereof.

The weekly maintenance charge for 1936-37 was £2 18s. 0d. per patient.

The consultant tuberculosis officer for Dispensary Area No. 1 is the visiting physician.

The x-ray apparatus in the tuberculosis block is, for convenience, also used for the dispensary patients from Lancaster and district.

The average length of stay of patients at the Lancaster Pulmonary Hospital during 1936 was as under :—

Patients discharged	...	...	...	...	...	195 days.
Patients who died in the hospital	...	...	...	...	...	102 days.

Dr. Leigh reports :—

During 1936, 81 patients were admitted, 55 were discharged, and 26 died.

The type of case admitted was similar to that recorded in last year's report. Many of the patients were in an advanced stage of disease, having been admitted for the sake of isolation and nursing.

It was found possible to attempt artificial pneumothorax treatment in seven cases, and in six of these the induction was successful. As is usual in moderately advanced cases, complete collapse of the lung was interfered with by the presence of adhesions. One patient in whom an induction failed was transferred to High Carley Sanatorium to have the operation of thoracoplasty.

The administration of gold salts was tried in ten cases. Most of the injections were done with a suspension of the gold compound in oil specially prepared for intramuscular injection, in preference to the intravenous method. Five cases had to cease for either intestinal or skin complications; two patients left the institution before their gold treatment was completed; and the other three showed definite improvement. Four cases of the series lost their tubercle bacilli.

No new specific remedies have been tried during the year, but a chronic advanced case suffering from intestinal complications was treated by histidine; much improvement of the abdominal condition resulted and the patient, who was confined to bed before admission, left the hospital able to go about.

Dr. Bradbury amplified his previous work on blood sedimentation in tuberculosis ; the result of his work was embodied in a paper given to the North Western Tuberculosis Society at their March meeting.

As most of the patients had to remain in bed it has not been possible to develop occupational therapy. Those who are able assist the nurses in keeping the verandah and cubicles tidy and, in addition, the women take part in mending the hospital linen.

There is a bowling green for the men and, during the summer, through the kindness of members of the Hospital Board, two bowling clubs brought some of their members who both played and entertained the patients. There is also a small billiards table, which is much in demand and has been a pleasure and indirectly a help to many of the male patients. The female patients occupy their spare time by doing needlework, and in their recreation room there is a piano. The hospital is equipped with an excellent wireless installation ; speakers are installed in suitable places and each bed is provided with headphones. There is a useful library which has been considerably augmented recently through the kindness of the Lancaster and District Co-operative Society, who presented the institution with a large number of books from their own library.

The Christmas festivities were most successful, inasmuch as even the very poorly patients were able to enjoy themselves, and a really good entertainment was provided by the " up " patients (as distinguished from the " bed " patients) with the assistance of Dr. Chapman and members of the nursing staff.

A religious service is held every week, and we have to thank the clergy of St. Luke's Church, Skerton, the Nonconformist ministers, and the Roman Catholic priests who have so kindly ministered to the patients.

I regret to record the death of the Rev. A. J. Jervis, which took place early this year after a short illness. His excellent services as Church of England Chaplain to the institution will be remembered for a long time.

All probationer nurses take a course of training organised by the College of Nursing, and a series of lectures on tuberculosis, forming part of this course, was given in the autumn.

I would like to express thanks to Dr. Bradbury for his valuable assistance in the work of the institution, and to the members of the nursing staff whose willing work and cheerfulness have done much to help the patients.

Details of work carried out at Lancaster Hospital during 1936 :—

Artificial pneumothorax—							
Inductions	...	...	...	...	...	...	7
Refills	...	...	...	...	...	...	120
Gas replacements	...	...	...	...	...	...	29
Gold salts—							
Injections of sanocrysin	...	...	...	...	...	...	10
Injections of solganol	...	...	...	...	...	...	83
Histidine injections	...	...	...	...	...	...	24
Blood sugar estimations	...	...	...	...	...	...	4
Blood sedimentation tests	...	...	...	...	...	...	223
Mantoux tests	...	...	...	...	...	...	6
X-ray work—							
Screen examinations	...	...	...	...	...	...	159
Skiagrams	...	...	...	...	...	...	229
Sputum examinations (positive, 197 ; negative, 68)	...	...	...	...	...	...	265

Numbers of patients afforded special treatment in the hospital for the first time during 1936 :—

Artificial pneumothorax—							
Attempted	...	...	...	...	...	...	7
Satisfactory	...	...	...	...	...	...	6
Unsatisfactory	...	...	...	...	...	...	1
Gold salts (sanocrysin and solganol)	...	...	...	...	...	...	10
Histidine	...	...	...	...	...	...	1
Insulin	...	...	...	...	...	...	2

Numbers of patients in the hospital on 31st December, 1936, who were having special treatment :—

Artificial pneumothorax	...	...	...	...	...	...	3
Gold salts	...	...	...	...	...	...	3

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1936
(Definitely tuberculous, 885 ; doubtful, 4.) 889

Examinations by tuberculosis officer at—						Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of " <i>old</i> " <i>cases</i> and " <i>old</i> " <i>contacts</i> .
Patients' homes	...	...	...	...	...	151	838
Lancaster Chief Dispensary	...	...	...	...	...	148	571
Chorley Branch Dispensary	...	...	...	...	...	152	839
Preston Branch Dispensary	...	...	...	...	...	99	482
						399	1,892
Attendances of patients at dispensaries for artificial light treatment—							
Lancaster Dispensary (28 individual patients)	...	...	...	...	...	751	} 4,047
Chorley Dispensary (63 individual patients)	...	...	...	...	...	1,700	
Preston Dispensary (45 individual patients)	...	...	...	...	...	1,596	
Attendances for artificial pneumothorax treatment (19 individual patients)						...	199
Mantoux tests	...	...	...	...	...	...	12
Blood sedimentation tests	...	...	...	...	...	...	10

XV.—DISPENSARY AREA No. 2
(including Withnell Pulmonary Hospital).

Area (estimated population 327,593) embraces Clitheroe, Colne, Nelson, Burnley Rural, Blackburn Rural, Accrington, Darwen, Haslingden, Rawtenstall, and Bacup districts.

Consultant Tuberculosis Officer ... DR. B. MACPHEE.
(Dr. MacPhee is also visiting medical superintendent of the Withnell Pulmonary Hospital).

Assistant Tuberculosis Officers ... DR. S. C. ADAM.
DR. J. N. WHYTE (2 days per week).

Dr. MacPhee reports :—

During the year 1936, the administration and work of this dispensary area has proceeded smoothly and satisfactorily along routine lines as in previous years.

The chief dispensary at Accrington was honoured by visits from the following lady and gentlemen in 1936 :—

21st April—Dr. N. R. Dharmavir, Lahore, India.

17th June—Dr. A. M. Fleming, Gibraltar.

11th July—Dr. Mary Champtaloup, Taranaki, New Zealand.

4th September—Dr. George Hurrell, Tuberculosis Officer,
Newcastle-upon-Tyne.

The x-ray work, pathological examinations, and artificial pneumothorax treatment have, as hitherto, been centralised and undertaken at the chief dispensary. During the year, 1,221 skiagrams (including 22 for County patients in Eastby Sanatorium) were taken and 601 screenings made; 974 specimens of sputum were examined (positive 165, negative 809); and 317 artificial pneumothorax refills were given to 27 individuals.

There is always a residual number of cases of especial difficulty in diagnosis. From these, 46 pathological specimens were submitted to the Public Health Laboratory, Manchester, where 13 were reported as positive for tubercle and 33 negative.

Ultra-violet radiation treatment was carried out at the Accrington Dispensary, and also at the two branch dispensaries at Nelson and Stacksteads. The lamps in use are the carbon arc, Jesionek mercury vapour, Kromayer mercury vapour, Sunic mercury vapour, radiant heat, and infra-red. Sessions are held thrice weekly at each centre and the patients' attendances are, on the whole, very regular.

PREGNANCY AND TUBERCULOSIS.



P.1(a).—E.S., female, aged 17. T.B. minus. Patient referred to dispensary by doctor for opinion; general condition good; only sign in chest was abnormal bronchial breathing at right apex. Skiagram taken 18-8-32 shows: In the right upper zone, in the first interspace in front near the periphery, shadowing, probably an Assmann's focus, with some striated shadowing passing down to the upper part of the root. Sputum negative. Admitted High Carley 7-10-32 and artificial pneumothorax induced; discharged 5-11-32 and pneumothorax maintained at dispensary until 16-1-35. Result: Satisfactory—no symptoms.



P.1(b).—Same patient. Skiagram taken 15-4-37 shows shadowing in the first interspace indicating scarred tissue. There is also flattening of the right leaf of the diaphragm with filling in of the costo-phrenic angle due no doubt to a little fluid which accumulated during the pneumothorax. During treatment patient had a miscarriage in Nov., 1932, and subsequently again became pregnant, when it was considered advisable to induce abortion before the end of the fourth month. Early in 1935 patient again became pregnant; it was decided to allow the pregnancy to run the full course, and she was delivered of a healthy child. At present time both patient and child are in excellent health.

[Skiagrams taken at Accrington Dispensary.]

RIGHT.

LEFT.

Ancillary forms of treatment, such as the application of acid nitrate of mercury by spiking, "Snow," and the intradermal injection of hydnocarpus oil, are in use in cases of lupus.

Seventeen patients were given tuberculin injections; among these were cases of glandular and genito-urinary tuberculosis.

After-care work was very materially assisted by the grant of money made by the Tuberculosis Committee. During the year £296 was expended—not a large sum when all the circumstances are taken into consideration.

It is perhaps worthy of note that one of the boys sent to Burrow Hill Sanatorium Colony, Frimley, Surrey, for training, returned home on the 25th March, 1937, and I am pleased to be able to state that his training in gardening was instrumental in getting him employment with the Clayton-le-Moors Urban District Council. This was done through the dispensary organisation.

I am glad to be in a position to report a continued active co-operation between the general practitioners, the hospitals—both general and Public Assistance—and ourselves. As has been repeatedly said, the success of the scheme largely depends on the active co-operation of the general practitioner. I should like to record the ready assistance given at all times by the officers of the various local authorities and by the Lancashire County school medical officers. Of recent years there has been a closer co-operation between these latter officers and the dispensary staff, and thus we have had brought to our notice a larger number of school children suffering from suspected tuberculosis.

I would again express my grateful appreciation of the valuable assistance of my medical colleagues, the health visitors, and the clerical staff.

WITHNELL PULMONARY HOSPITAL, NEAR CHORLEY.

Matron ... MISS D. WILLMAN.

The County Council in December, 1924, purchased Withnell Hall (including two cottages, outbuildings, and 37 acres of land) situated on the main road from Blackburn to Chorley. The first patient was admitted on the 15th August, 1927. Accommodation is provided for 52 male patients (20 in double cubicles, 7 in single cubicles, 18 in four wards and 7 in wooden cubicles). There is a small treatment block in which artificial pneumothorax inductions and refills and minor operations are carried out. The hospital serves mainly Dispensary Area No. 2. Three houses were provided on the estate for employees.

The weekly maintenance charge for 1936-37 was £3 4s. 11d. per patient; this includes 12s. 9d. for loan charges and 6s. for capital expenditure defrayed from revenue.

The average length of stay of patients at Withnell during 1936 was as under :—

Patients discharged	...	...	...	...	...	176 days.
Patients who died in the hospital	...	...	...	...	...	178 days.
Observation cases discharged	...	...	...	...	...	31 days.

Dr. MacPhee reports :—

During the year, 92 patients were admitted to the institution, 66 discharged, and 27 died; in addition, 13 cases were sent in for observation and diagnosis and 10 were discharged (3 of which were diagnosed as tuberculous). The percentage of beds occupied during the year was 93·3.

In the x-ray department, 137 screenings were made and 181 skiagrams taken in respect of institutional patients; in addition, 36 screenings were made and 8 skiagrams taken of dispensary patients who for convenience attended the hospital as out-patients.

With regard to treatment, the basic sanatorium routine was carried out generally and the following statement shows the special treatment and clinical methods undertaken in selected cases during the year under review :—

Artificial pneumothorax—							
Inductions	...	...	...	...	...	...	7
Refills	...	...	...	...	...	...	86
Gas replacements	...	...	...	...	...	...	2
Gold salts—							
Injections of solganol	...	...	...	...	...	...	21
Aspirations	...	...	...	...	...	...	5
Blood sedimentation tests	...	...	...	...	...	...	79
Mantoux tests...	...	...	...	...	...	...	1
Lipiodol injections	...	...	...	...	...	...	2
X-ray work—							
Screen examinations	...	...	...	...	...	...	137
Skiagrams	...	...	...	...	...	...	181
Sputum examinations (positive 310, negative 210)	...	...	...	...	...	...	520

Numbers of patients in Withnell afforded special treatment for the first time during 1936 :—

Artificial pneumothorax—							
Attempted	...	...	...	...	...	...	7
Satisfactory	...	...	...	...	...	...	3
Unsatisfactory	...	...	...	...	...	...	4
Gold salts (solganol)	...	...	...	...	...	...	3
Collison's inhalation treatment	...	...	...	...	...	...	4

Numbers of patients in the hospital on the 31st December, 1936, who were having special treatment :—

Artificial pneumothorax	...	...	...	...	...	...	1
Artificial light	...	...	...	...	...	...	1

In general terms, it may be said that treatment was carried out on similar lines to those of previous years. We probably housed a larger proportion of advanced cases where special forms of treatment were out of the question. There were 27 deaths—a high number—actually 25 per cent. of the admissions. To a great degree, the high percentage of deaths must be accepted as a measure of the hospital's usefulness, as most of these cases were retained on account of bad home conditions—poor accommodation and lack of nursing facilities—with the consequent likelihood of spread of infection.

Two structural improvements were commenced during the year, namely, a new sleeping pavilion of seven cubicles to replace the huts used by the more ambulatory cases, and a new wooden pavilion containing a dining room for the nursing staff and one for the domestic staff. Both pavilions will be heated by a hot-water system.

Occupational therapy is carefully organised to the requirements and capabilities of the patients.

Mr. T. Hegarty, dentist, visits the hospital as occasion arises; during the year he made eight visits to the institution and treated 13 patients.

As in former years, healthy recreation and suitable entertainment have been liberally provided for the patients, and I should like here to place on record the keen enthusiasm the matron, Miss Willman, has shown in this direction on the patients' behalf. We have also to thank the many friends who have come forward with concert parties, and I am happy to be able to include amongst them members of our dispensary staffs.

As in former years, the libraries of the patients and staff have been augmented and are eagerly patronised and appreciated.

On behalf of the patients, I should like to express our indebtedness to the Rev. S. Archer, the Rev. N. F. Priestley, and the Rev. T. Carney for their helpful ministrations.

I willingly renew my thanks to my medical colleagues, the matron, and the staff for their assistance during the year.

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1936
(Definitely tuberculous, 1,113 ; doubtful, 5.) 1,118

					Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of " <i>old</i> " cases and " <i>old</i> " contacts.
Examinations by tuberculosis officer at—						
Patients' homes	...	...	...	...	162	242
Accrington Chief Dispensary	...	...	...	...	417	1,201
Darwen Branch Dispensary	...	...	...	...	68	107
Nelson Branch Dispensary...	...	...	...	...	210	533
Stacksteads Branch Dispensary	...	...	...	...	120	513
					815	2,354

Attendances of patients at dispensaries for artificial light treatment—

Accrington Dispensary (46 individual patients)	2,257	} 4,457
Nelson Dispensary (26 individual patients)	...	...	...	1,089
Stacksteads Dispensary (20 individual patients)	...	...	...	1,111

Attendances for artificial pneumothorax treatment (27 individual patients) .. 317

Attendances for tuberculin treatment 426

Mantoux tests 2

Lectures or addresses given 5

Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals 54

Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.) 11

Visits by dispensary nurses to patients' homes—

Routine visits	6,744	} 7,529
Application of surgical dressings	...	...	...	...	107
Adjustment of splints and surgical appliances	...	...	...	...	162
Other actual nursing	...	...	...	...	516

Patients' dispensary attendances for attention by nurses—

Application of surgical dressings	789	} 848
Adjustment of splints and surgical appliances	59	

Sanitary defects reported to the local medical officers of health 21

Sanitary defects which after notification were remedied 19

Disinfections carried out by local sanitary authorities 1,316

Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification 96.9%

XVI.—DISPENSARY AREA No. 3
(including Wolstenholme Pulmonary Hospital).

Area (estimated population 375,047) embraces Ramsbottom, Littleborough, Radcliffe, Heywood, Crompton, Royton, Prestwich, Middleton, Chadderton, Failsworth, Ashton-under-Lyne, Mossley, and Denton districts.

Consultant Tuberculosis Officer . . DR. G. FLETCHER.
(Dr. Fletcher is also visiting medical superintendent of the Wolstenholme Pulmonary Hospital).

Assistant Tuberculosis Officers . . DR. J. L. ARMOUR.
DR. W. FETTES.

Dr. Fletcher reports :—

The main feature in the area during 1936 was the opening of the new dispensary at Brook Street, Chadderton. The new dispensary is much appreciated by the patients and staff, the work being carried on in more convenient conditions than formerly.

Towards the end of the year, arrangements were completed for beginning work on the new Ashton-under-Lyne Dispensary which we hope to occupy early in 1938.

In January, I had the pleasure of addressing the Ashton-under-Lyne Rotary Club, and, in October, a tuberculosis exhibit was contributed to the Health Week at Middleton.

During the year, the Ashton-under-Lyne and District Tuberculosis Care Committee assisted 48 patients at a cost of £120 7s. 1d.; the Prestwich Care Committee assisted 3 cases at a cost of £15 9s. 0d.; and 26 cases were dealt with by the Radcliffe, Whitefield, and District Relief Fund for Consumptives at a cost of £120 15s. 4d.

In the districts not covered by voluntary care committees, 58 cases were assisted through the County care fund at a cost of £127 16s. 10d.

The funds of the care committee for Ashton-under-Lyne and District profited by the annual dance in the Town Hall in January.

The children's Christmas party at the Ashton-under-Lyne Dispensary as usual proved a great success.

During the year, 1,703 skiagrams were taken at Ashton-under-Lyne Dispensary as compared with 1,859 in 1935.

At this dispensary also 1,298 specimens of sputum were examined, 290 being positive and 1,008 negative.

At the Ashton-under-Lyne Light Centre, treatment was continued on the same lines as in former years. The number of patients treated during 1936 showed a slight increase over the previous year. In certain cases of lupus, good results continue to be produced by treatment with moogrol preparations.

Vaccine and tuberculin treatment were given to a few cases. One case of Bazin's disease, which had responded poorly to various forms of treatment, definitely improved under a course of histidine injections.

At the Radcliffe Light Centre the same methods of treatment were employed as at Ashton-under-Lyne.

Observation visits were paid to Ashton-under-Lyne Dispensary and Radcliffe Dispensary during 1936 by 93 cases which had been successfully treated by artificial light.

Monthly consultations were held with the medical superintendents at Aitken and Springfield Sanatoria and Chadderton Pulmonary Hospital.

As in former years, I have to record my appreciation of the co-operation of the medical practitioners in this area and of the loyal support of my dispensary staff.

WOLSTENHOLME PULMONARY HOSPITAL, NORDEN.

Matron MISS E. G. GLASS.

The County Council, on the 1st July, 1933, took over from the Rochdale Corporation, Wolstenholme Hall, Norden, which had been used by them as a pulmonary hospital for 45 adult male patients of whom 25 to 30 were sent by the County Council. The estate is situated on the Edenfield road, $3\frac{1}{2}$ miles west of Rochdale, and contains $7\frac{1}{4}$ acres of land with two cottages and outbuildings. The County Council have erected entirely new buildings for the treatment of 55 male patients accommodated as under:—8 in single cubicles, 20 in double cubicles, 23 in five wards, and 4 in double sleeping shelters. The new buildings contain an x-ray room, dark room, laboratory, operating theatre, sterilising room, dining room, servery, two nurses' duty rooms, two linen stores, patients' locker rooms, sluice rooms, and lavatory accommodation. A recreation room, reading room, and dressing rooms have been provided in a separate building. The Hall has been adapted for housing the nursing and domestic staffs and for other administrative purposes.

The capital cost of the scheme was £17,811 10s. 0d., representing £324 per bed.

The weekly maintenance charge for 1936–37 was £3 2s. 7d. per patient, which includes 5s. 9d. for loan charges and 5s. 3d. for capital expenditure defrayed from revenue.

Of the 55 beds, the County Council have undertaken to lease to the Rochdale Corporation 25 beds.

The average length of stay of patients at Wolstenholme during 1936 was :—

Patients discharged	...	...	...	...	146 days.
Patients who died in the hospital	...	...	...	...	36 days.
Observation cases discharged...	...	...	...	...	82 days.

A motor ambulance is available at the hospital.

Dr. Fletcher reports as follows :—

During the year, 72 County patients were admitted, 43 were discharged, 8 were transferred to other institutions, and 18 died. In addition, 6 observation cases were admitted, 4 were accepted as tuberculous and 2 were discharged as non-tuberculous.

Quarterly visits were made by members of the Rochdale Health Committee, accompanied by the Medical Officer of Health. The institution was also visited by County Councillor H. Bright, a member of the County Tuberculosis Committee.

Two courses of lectures were delivered, one to the junior nurses on anatomy and physiology, and the other to the senior nurses on tuberculosis.

Such of the patients as were fit engaged in light work, while a few were fit enough to be employed in the workshop or in the garden.

The library continues to increase and is well patronized by the patients. Grants were received for the library from the County Tuberculosis Committee, and books were presented by Toc H and various concert parties. We are grateful also to the County Tuberculosis Committee for the provision of pictures, and for the extra fare provided at Christmas.

The patients were well catered for in the matter of recreation. During the year, a putting green and a set of deck quoits were provided. Concerts and sketches were given in the recreation room by many friends, and a very successful garden party was held in July. Cinematograph films were also shown on several occasions.

During the summer the patients had two outings, one to Buxton and one to Pickmere Lake.

In connection with all these activities we are much indebted to the patients' social club, which further made a gift of silver plate for the altar.

The Bible Class from Norden Parish Church visited the institution on several occasions and played billiards and whist matches with the patients.

The visits of Mr. C. Fearn, the dentist, contributed to the comfort and progress of the patients, and we are grateful to the Rev. H. Patrick and Fathers Watterson and O'Sullivan for their regular ministrations.

Details of work carried out at Wolstenholme during 1936 :—

Artificial pneumothorax—								
Inductions	...	...	...	...	...	...	...	2
Refills	...	...	...	...	...	...	...	35
Gold salts—								
Sanocrysin injections	...	...	...	...	...	...	...	92
Oleo-sanocrysin injections	...	...	...	...	...	...	...	14
Blood sedimentation tests	...	...	...	...	...	...	...	128
X-ray work—								
Screen examinations	...	...	...	...	...	...	...	52
Skiagrams	...	...	...	...	...	...	...	151
Sputum examinations (positive, 150 ; negative, 139)	...	...	...	...	...	...	...	289

Numbers of patients afforded special treatment in the hospital for the first time during 1936 :—

Artificial pneumothorax—								
Attempted	...	...	...	...	...	...	...	2
Satisfactory	...	...	...	...	...	...	...	1
Unsatisfactory	...	...	...	...	...	...	...	1
Gold salts (sanocrysin)	...	...	...	...	...	...	...	9

Numbers of patients in the hospital on the 31st December, 1936, who were having special treatment :—

Artificial pneumothorax	...	...	...	...	...	...	...	1
Sanocrysin	...	...	...	...	...	...	...	3

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1936
(Definitely tuberculous, 1,479 ; doubtful, 0.) 1,479

Examinations by tuberculosis officer at—					Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of " <i>old</i> " cases and " <i>old</i> " contacts.
Patients' homes	...	...	...	...	180	388
Ashton-under-Lyne Chief Dispensary	...			...	441	2,127
*Chadderton Branch Dispensary	...	...		...	281	1,004
Middleton Branch Dispensary	...	...		...	88	335
Radcliffe Branch Dispensary	...	...		...	169	736
Rochdale Branch Dispensary	...	...		...	151	449
					1,130	4,651

*Opened 28th September, 1936, to replace the Oldham Branch Dispensary ; the figures relate to the attendances at both dispensaries.

Attendances of patients at dispensaries for artificial light treatment—

Ashton-under-Lyne Dispensary (100 individual patients)	...	3,914	} 5,164
Radcliffe Dispensary (32 individual patients)	1,250	

Attendances for artificial pneumothorax treatment (34 individual patients) 369

Attendances for moogrol treatment 46

Care committee meetings attended by—

(a) Tuberculosis officers	...	...	...	...	...	...	9
(b) Tuberculosis health visitors	...	...	...	...	...	...	6

Lectures or addresses given 1

Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals 108

Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.) 8

Visits by dispensary nurses to patients' homes—

Routine visits	8,016	} 8,858
Application of surgical dressings	...	...	...	...	...	159
Adjustment of splints and surgical appliances	...	...	...	...	...	420
Other actual nursing	...	...	...	...	...	263

Patients' dispensary attendances for attention by nurses—

Application of surgical dressings	79	} 213
Adjustment of splints and surgical appliances	134	

Sanitary defects reported to the local medical officers of health 51

Sanitary defects which after notification were remedied 26

Disinfections carried out by local sanitary authorities 321

Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification 91.5%

XVII.—DISPENSARY AREA No. 4
(including Peel Hall Pulmonary Hospital).

Area (estimated population 366,838) embraces Westhoughton, Atherton, Farnworth, Leigh, Swinton and Pendlebury, Eccles, and Stretford districts.

Consultant Tuberculosis Officer . . . DR. G. JESSEL.
(Dr. Jessel is also visiting medical superintendent of the Peel Hall
Pulmonary Hospital).

Assistant Tuberculosis Officers .. DR. A. B. JAMIESON.
DR. H. J. VILLIERS.

Dr. Jessel reports :—

At the end of this chapter will be found statistical data relating to the work done at the five dispensaries in the area. Compared with 1935, the figures show substantial increases in the numbers of examinations of new and old patients, Mantoux tests, sputum examinations, and surgical dressings ; eight fewer patients attended for artificial pneumothorax refills. As hitherto, the specialised x-ray and other work has been done at the Eccles Dispensary under uncomfortably overcrowded conditions, and the fact that the office work of the area is carried on at Leigh, nine miles away, is, and always has been, a handicap. The existing arrangements cause, at times, discomfort to patients and render the work of the staff more difficult. The position is fully appreciated by the Central Tuberculosis Officer but, so far, the efforts of all concerned have been unsuccessful in the endeavour to discover improved alternative accommodation.

The confidence which the dispensaries enjoy is reflected in the large number of patients referred by medical practitioners for diagnosis, and in the co-operation between the various hospital staffs and ourselves. There is reason to believe that the better results of treatment, as shown by the number of ex-hospital patients who are in good health, are causing the dread of tuberculosis which formerly existed gradually to abate. This dread was probably aggravated by injudicious methods of public education and it is undoubtedly the wiser policy to make a less special, and more general, appeal to the public to seek medical advice when feeling unwell. In this connection it can be said that the great

SKIAGRAMS OF SPECIAL INTEREST.



E.1.—W.H.M., male, aged 64 years. Syphilis of lung. Referred to T.O. by local doctor. Chief complaints: Cough, sputum, dyspnœa, and very slight hæmoptysis. Was treated for syphilis 25 years ago. Wife had two miscarriages. Wassermann reaction strongly positive.



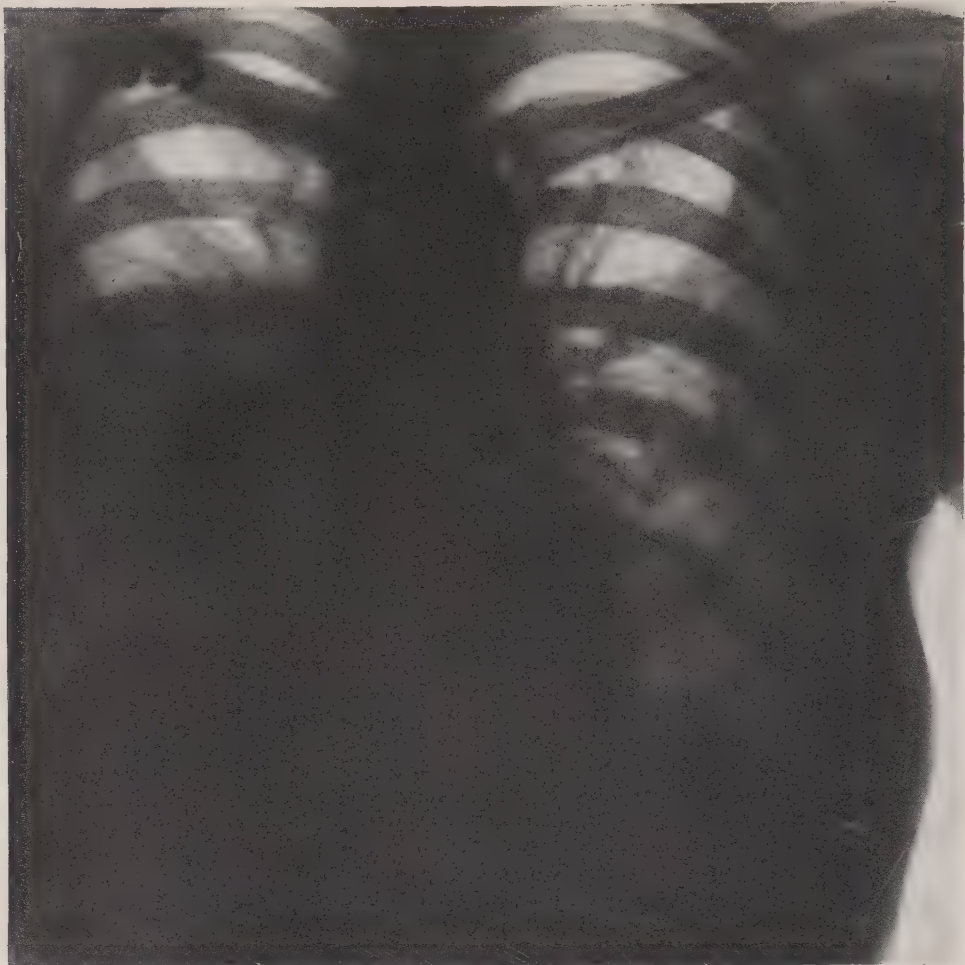
E.2.—E.B., female, aged 31 years. Transposition of viscera. Examined as a contact of son who died from tuberculous meningitis.

[Skiagrams taken at Eccles Dispensary.]

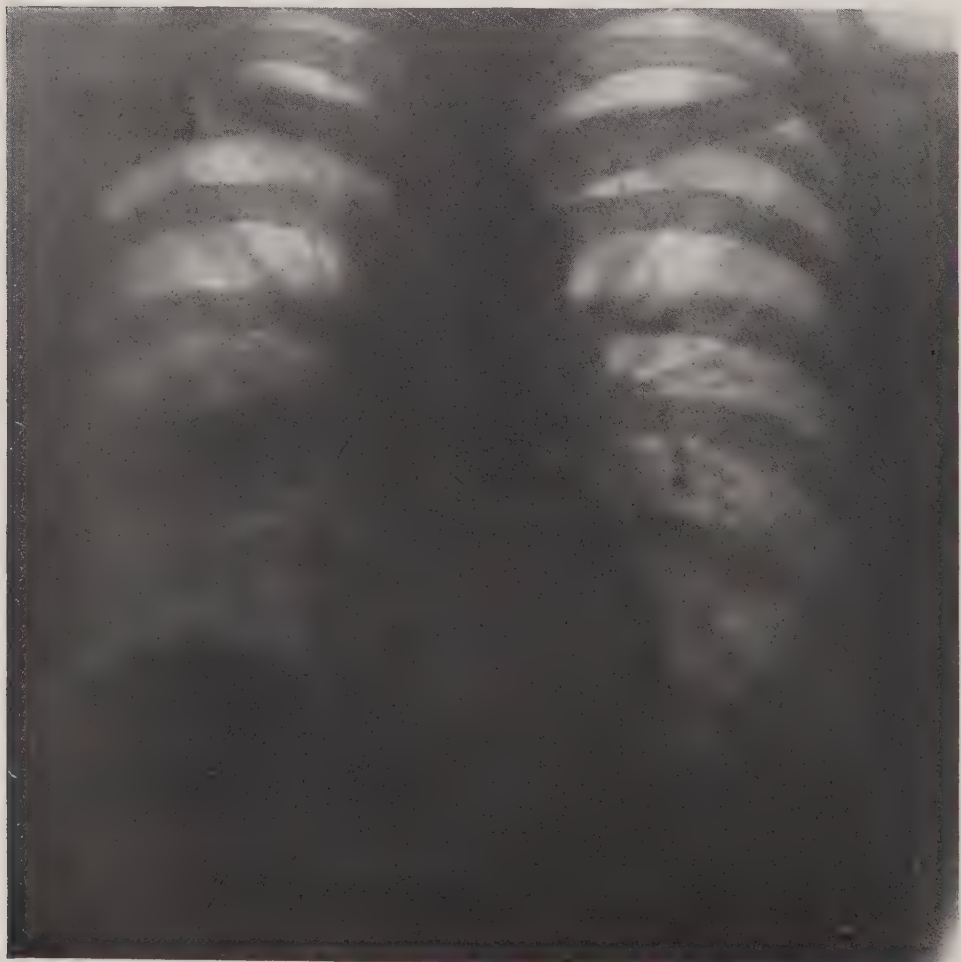
RIGHT.

LEFT.

SKIAGRAMS OF SPECIAL INTEREST—*contd.*



E.3(a).—E.R., female, aged 38 years. Infarct of lung. Had rheumatic fever ten years ago. Off work eighteen months. Present illness commenced suddenly about two months ago. "After cough, felt a crack, then blood came." Had hæmoptysis each day for three days. Well nourished. Percussion note was impaired over right base in mid-axillary line. Crepitations inner border of right scapula. Tachycardia with systolic murmur at apex 6th space and outer side mid line. Skiagram shows a wedge of opacity, apex inwards, a little above diaphragm in right lower lobe. Below this opacity is seen a patch showing small opacities.

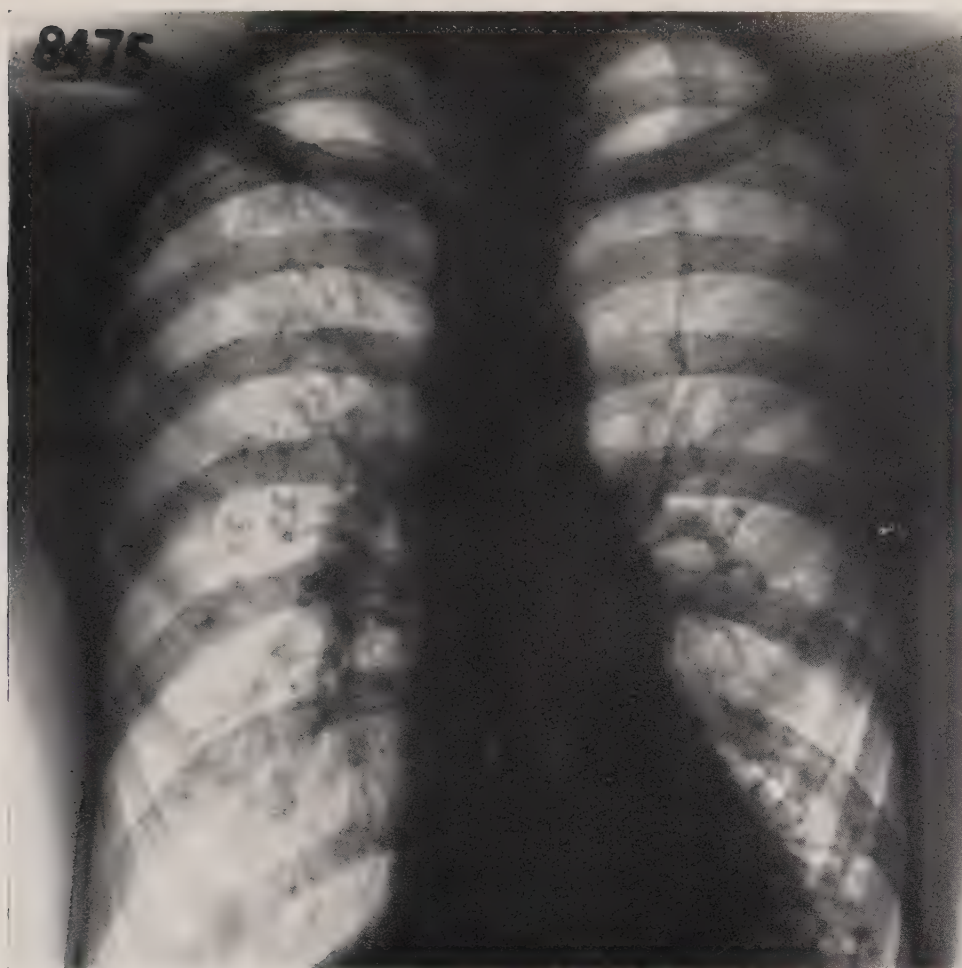


E.3(b).—Same patient. Skiagram taken six months later shows an elliptical patch of mottling in right lower zone, similar to above skiagram but perhaps a little smaller.

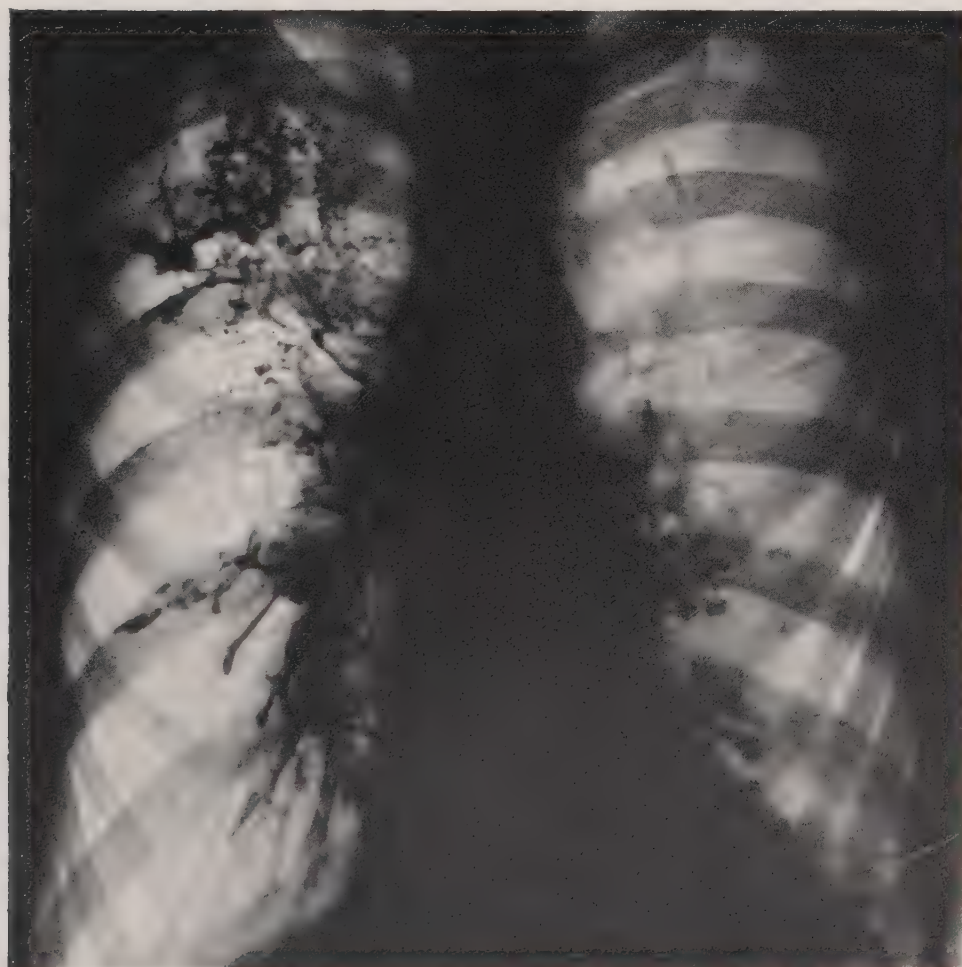
[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.



E.4(a).—F.J., male, aged 17 years. Bronchiectasis. Patient had had a weak chest since infancy. Duration of present illness about four days. Complained of cough, sputum, loss of weight, and hæmoptysis. Rather weedy youth. Physical signs indefinite. Skiagram suggests bronchiectasis, especially left lower lobe. There is also generalised branching on right side.



E.4(b).—Same patient. Skiagram taken after injection of lipiodol confirms diagnosis of bronchiectasis.

[Skiagrams taken at Eccles Dispensary.]

RIGHT.

LEFT.

majority of sensible people willingly co-operate with us when they are told the truth in simple, reassuring language. Our dispensaries and officers are, in general, so well known for what they are that it is doubtful whether any appreciable number of persons are likely to be influenced by attempts at camouflage. In my experience of tuberculosis, honesty is certainly the best policy.

Those readers who peruse these annual reports critically will realise the vast amount of detailed, specialised, medical work which is carried out year by year; likewise, the many contacts the staff make in the ordinary course of their duties. The tuberculosis officer who aims at realising the ideals of his office must undertake somewhat the rôle of schoolmaster and cleric as well as medical specialist. It is also evident that no mean part of his reward lies in the growing volume of appreciation of patients. What has been said in this connection applies with equal force to the dispensary nursing staff, whose duties are even less spectacular. To them and to my medical colleagues I am greatly indebted.

An important feature of our work is the close co-operation which exists between the dispensaries and the Peel Hall Pulmonary Hospital, to which institution practically all our adult male pulmonary cases are admitted. There is thus continuity of treatment for these men throughout their illness, while the knowledge of their home circumstances is sympathetically applied to their advantage.

It will be obvious that in the ordinary course of our work difficult and interesting cases are frequently encountered. As usual, particulars and reduced prints of skiagrams of some of these are here inserted.

Mantoux tests.—The following Table 23, showing the work done by Dr. A. B. Jamieson and Dr. H. J. Villiers, is interesting. There is a marked similarity as regards the relative proportions of the negative and positive results, and it would appear that the mining and cotton districts of Leigh and Farnworth, with which Dr. Villiers is associated, have no greater incidence of positives than the residential and general industrial districts around Manchester and Salford, with which Dr. Jamieson is concerned. From the table it will also be seen that the positive results show a tendency to rise as the age increases, and that, taking all ages up to 15 years, where there was contact with a known tuberculous case about 20 per cent. of the children examined gave negative results, while where no contact was known the negatives numbered roughly one-third.

TABLE 23.—*Children on whom Mantoux tests were done during 1936.*

Districts and age-groups.	History of contact with T.B. plus case.		No known contact.	
	Mantoux reaction.		Mantoux reaction.	
	Positive.	Negative.	Positive.	Negative.
LEIGH AND FARNWORTH DISTRICTS.				
0 to 5 years	6	2	9	3
5 to 10 years	2	2	18	13
10 to 15 years	10	1	16	4
Total	18	5	43	20
ECCLES, STRETFORD AND SWINTON DISTRICTS.				
0 to 5 years	4	1	5	9
5 to 10 years	14	4	21	10
10 to 15 years	17	4	17	3
Total	35	9	43	22

PEEL HALL PULMONARY HOSPITAL, LITTLE HULTON.

Matron .. MISS E. SIMMONS.

The Hall, with about 17 acres of land attached thereto, was presented in 1914 to the Lancashire County Council by Mr. A. Wynne-Corrie, and an additional 20 acres of land, and later 8 acres, were purchased. The adaptation of the premises as a pulmonary hospital—delayed owing to the Great War—was completed in 1921.

The hospital, accommodating 56 adult males, serves principally Dispensary Area No. 4.

Mr. H. Morriston Davies is the visiting consulting chest surgeon.

A motor ambulance is provided, and is available also for conveying patients to and from other hospitals.

The weekly maintenance charge for 1936–37 was £2 10s. 3d. per patient ; this includes 4s. 4d. for loan charges and 3s. 1d. for structural renewals and repairs.

The average length of stay of patients at Peel Hall during 1936 was as under :—

Patients discharged	...	...	...	...	226 days.
Patients who died in the hospital	...	...	...	...	180 days.
Observation cases discharged	...	...	...	...	101 days.

Dr. Jessel reports :—

Ninety-six definite and two observation cases were admitted in 1936, 75 definite and 3 observation cases were discharged, while 19 patients died. The data at the end of these notes show, as in previous years, that a good deal of specialised medical work has been done. I am still of opinion that strict bed rest in active disease and artificial pneumothorax treatment in suitable cases are the most widely applicable and successful modes of treatment we possess.

Mr. Morrision Davies continues as our visiting consulting chest surgeon, and has operated on patients suitable for phrenicectomy or division of adhesions.

Mr. Laslett has provided such dental treatment, including dentures in a few cases, as was deemed necessary.

In June we were fortunate in receiving the visit of the members of the County Tuberculosis Committee and the Salford Hundred. These visits undoubtedly encourage the staff and patients. Amongst other welcome visitors during the year were a deputation from the Staffordshire, Wolverhampton, and Dudley Joint Committee for Tuberculosis, the medical officer of health and the tuberculosis officer of Bolton, and members of the Bolton Branch of the College of Nursing.

In previous reports I have referred to the amenities of the hospital and the methods employed to make patients happy and comfortable by means of hobby-exercises and otherwise. The publication of the patients' annual magazine, *Our Mag.*, was, as usual, a popular event.

Religious facilities, as in previous years, have been available for patients as follows : Ambulant cases attended local places of worship if they so desired, while for the bed patients there have been the visits of the clergy and ministers of various denominations and the wireless services.

At Christmas we had our usual elaborate ward decorations, and were favoured on Christmas morning by a visit from the Chairman of the Worsley Urban District Council (County Councillor J. Eastham, J.P.).

Two of our nurses were successful during the year in gaining the Certificate of the Tuberculosis Association. To this end, Dr. Villiers and I have held weekly courses of instruction ; the practical work was taught by the matron and the sister who, together with the other members of the nursing staff, have, as usual, given of their best on behalf of the patients.

Details of work carried out at Peel Hall during 1936 :—

Artificial pneumothorax—							
Inductions	...	...	...	...	...	...	29*
Refills	...	...	...	...	...	...	702
Gas replacements	...	...	...	...	...	...	17
Phrenic nerve operations (by Mr. Morriston Davies)	...	...	...	...	...	...	6
Gold salts—							
Injections of sanocrysin	...	...	...	...	...	...	75
Blood sedimentation tests	...	...	...	...	...	...	438
Lipiodol injections	...	...	...	...	...	...	2
X-ray work—							
Screen examinations	...	...	...	...	...	...	680
Skiagrams	...	...	...	...	...	...	609
Sputum examinations (positive, 280 ; negative, 347)	...	...	...	...	...	...	627

Numbers of patients afforded special treatment in the hospital for the first time during 1936 :—

Artificial pneumothorax—							
Attempted	...	...	...	...	...	...	28*
Satisfactory	...	...	...	...	...	...	22
Unsatisfactory	...	...	...	...	...	...	6
Phrenic nerve operations	...	...	...	...	...	...	6
Gold salts (sanocrysin)	...	...	...	...	...	...	7

Numbers of patients in the hospital on the 31st December, 1936, who were having special treatment :—

Artificial pneumothorax	...	...	...	...	...	...	16
Artificial pneumothorax and sanocrysin	...	...	...	...	...	...	3
Phrenicectomy	...	...	...	...	...	...	2
Phrenicectomy and artificial pneumothorax	...	...	...	...	...	...	4
Sanocrysin	...	...	...	...	...	...	5
Artificial pneumothorax, phrenicectomy, and sanocrysin	...	...	...	...	...	...	1
Artificial pneumothorax and division of adhesions	...	...	...	...	...	...	1

* One bilateral case.

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1936
(Definitely tuberculous, 1,477 ; doubtful, 0.) 1,477

Examinations by tuberculosis officer at—					Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of “ <i>old</i> ” cases and “ <i>old</i> ” <i>contacts</i> .
Patients' homes	...	...	...	...	189	884
Leigh Chief Dispensary	...	...	...	...	266	1,138
Eccles Branch Dispensary	...	...	...	...	332	2,229
Farnworth Branch Dispensary	...	...	...	...	108	508
Pendlebury Branch Dispensary	...	...	...	...	31	405
Stretford Branch Dispensary	...	...	...	...	152	793
					889	5,073

Attendances of patients at the Eccles Dispensary for artificial light treatment (100 individual patients) 5,239
Attendances for artificial pneumothorax treatment (34 individual patients) 476

Sputum examinations—

Total number of specimens examined	...	...	...	...	...	2,260
Number where tubercle bacilli were found	...	...	...	...	...	303
Number of specimens sent by medical practitioners	...	...	...	...	...	264
Number of these where tubercle bacilli were found	...	...	...	...	...	22

Pus examinations (positive 10, negative 23) ... 33

Blood sedimentation tests ... 323

Mantoux tests ... 252

Contacts—

Number of selected persons examined	...	...	...	...	...	153
Number of cases of tuberculosis found	...	...	...	...	...	4

X-ray work—

Skiagrams—pulmonary 1,141, non-pulmonary 88*	...	...	...	...	...	1,229
Screenings	...	...	...	...	...	548

Care committee meetings attended by—

(a) Tuberculosis officers	...	...	...	...	...	38
(b) Tuberculosis health visitors	...	...	...	...	...	48

Care work—

Number of patients assisted by care committees and tuberculosis sections of civic guilds of help	...	...	...	...	...	231
Amount expended	...	...	...	...	...	£349/16/3
Number of patients assisted from County care fund	...	...	...	...	...	47
Amount expended	...	...	...	...	...	£84/16/1

Lectures or addresses given ... 3

Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals ... 64

Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.) ... 24

Visits by dispensary nurses to patients' homes—

Routine visits	8,884	} 9,665
Application of surgical dressings	...	...	...	...	...	265
Adjustment of splints and surgical appliances	...	...	...	...	...	217
Other actual nursing	...	...	...	...	...	299

Patients' dispensary attendances for attention by nurses—

Application of surgical dressings	430	} 466
Adjustment of splints and surgical appliances	36	

Sanitary defects reported to the local medical officers of health ... 26

Sanitary defects which after notification were remedied ... 17

Disinfections carried out by local sanitary authorities ... 555

Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification ... 91.0%

* Spine 23, hip 18, knee 16, foot 6, wrist 6, elbow 5, ankle 5, shoulder 4, hand 3, finger 1, pelvis 1.

XVIII.—DISPENSARY AREA No. 5
(including Rufford Pulmonary Hospital).

Area (estimated population 285,199) embraces West Lancashire Rural, Great Crosby, Waterloo-with-Seaforth, Litherland, Newton-in-Makerfield, Whiston Rural, Warrington Rural, and Widnes districts.

Consultant Tuberculosis Officer ... DR. C. W. LAIRD.
(Dr. Laird is also visiting medical superintendent of the Rufford Pulmonary Hospital).

Assistant Tuberculosis Officers ... DR. C. BERRY.
DR. J. N. WHYTE (2 days per week).

Dr. Laird reports :—

Dispensary work in Area No. 5 followed very much on the plan of previous years. More time has had to be devoted to x-ray work and artificial pneumothorax therapy, both of which, in order to be carried out expeditiously, entail the organisation of special sessions and consequently reduce, to some extent, the mobility of the medical and nursing staff. Dr. Berry has replaced Dr. Lilley as the whole-time senior assistant, and Dr. Whyte has succeeded Dr. Fettes for part-time duty in the area.

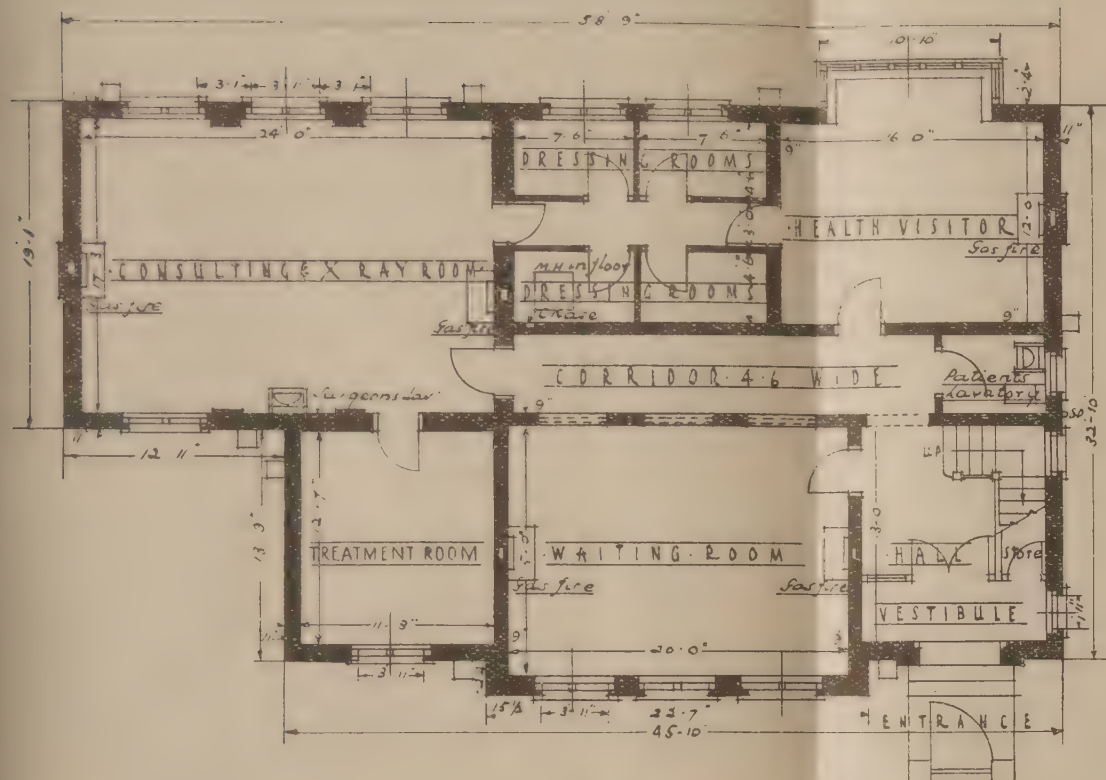
The provision made for a new dispensary at Widnes is timely, and is a matter for congratulation in view of the fact that it offers to provide more satisfactory premises from the point of view of both patients and staff. Plans of the new dispensary are here reproduced.

Voluntary care committees have continued their useful work in Widnes, Prescott, Earlestown and Huyton. From the last-mentioned area greater demands have been made on the local committee than heretofore owing to the substantial addition to the population through slum-clearance work in Liverpool. This has, in turn, given rise to the need for another branch dispensary, and steps have been taken to meet this need by the purchase on 1st October, 1937, of a suitable house in Huyton to serve the districts of Huyton, Roby, Prescott, and Whiston.

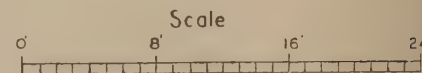
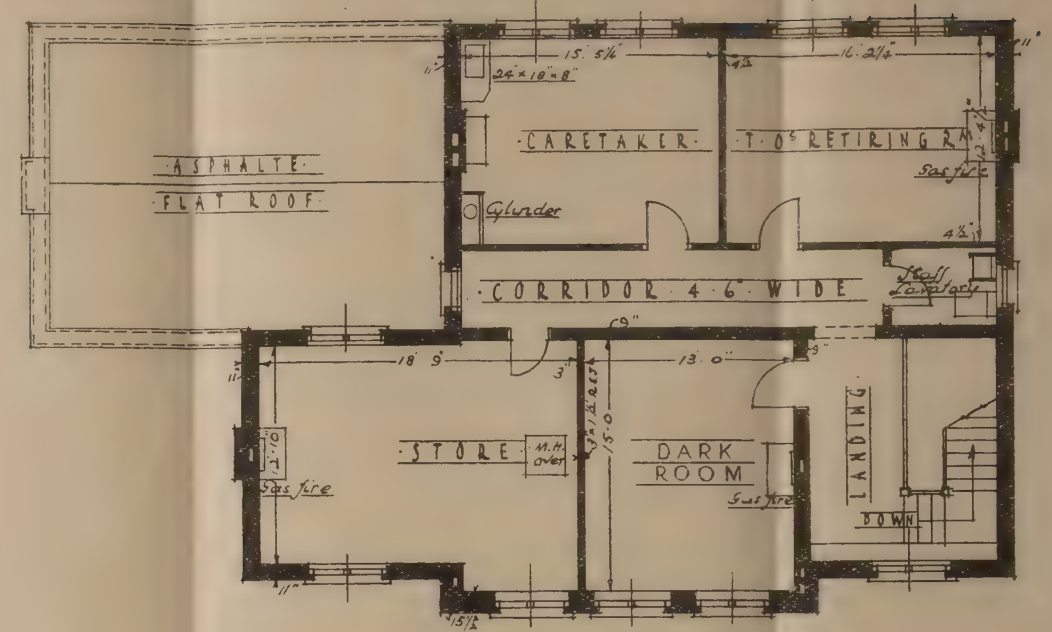
The number of skiagrams taken at Seaforth Dispensary during the year totalled 824, and 536 screen examinations were made; in addition, 63 skiagrams were taken and 87 screen examinations made at the Rufford Pulmonary Hospital in respect of dispensary patients who, for convenience, attended that hospital as out-patients.

WIDNES BRANCH DISPENSARY.

GROUND FLOOR PLAN.



FIRST FLOOR PLAN.



Plan of new branch dispensary premises to be built in Chapel Street, Widnes, to replace existing accommodation in Brendan House. The estimated cost of the premises and site is £3,635. The dispensary will serve a population of 59,341.

[Plan prepared by the County Architect.]

The total number of sputum examinations for the area was 932, of which 239 were positive.

At St. Helens Dispensary light treatment continues to be given for non-pulmonary conditions. The number of patients now attending is not large compared with that of earlier years, but in recent times marked diminution has been observed in the number of non-pulmonary cases suitable for treatment, partly owing to the fact that many had accumulated for years before light therapy was given. Artificial light has been supplemented by the local injection of hydnocarpates in the form of eulykol, and such measures have been attended with success. The attendances for treatment continue to be satisfactory; the percentage of patients who have had their fares paid in order to continue attendance being about four-fifths of the total.

I have to acknowledge with thanks the valuable help which I have had from all members of the dispensary staff, particularly on the clerical side.

RUFFORD PULMONARY HOSPITAL, NEAR ORMSKIRK.

Matron ... MISS S. HOLMES.

The County Council acquired, on the 18th October, 1920, Rufford New Hall, situated on the west side of the main road from Preston to Ormskirk, together with 128 acres of land adjoining the Hall. Under pressure from the Ministry of Health, a scheme was prepared for using the Hall and land for discharged sailors and soldiers, which included training the patients in several occupations. Some additional land was also obtained with a view to training in agricultural work, but all this, however, was abandoned in 1921 by order of the Ministry of Health, owing to financial stringency. The premises, first used as a pulmonary hospital on the 7th April, 1926, provide accommodation for 52 female patients.

The hospital serves as far as possible the districts in west Lancashire, so that relatives and friends will have reasonable facilities for visiting.

The weekly maintenance charge for 1936-37 was £2 12s. 6d. per patient, which includes 5s. 4d. for loan charges.

The average length of stay of patients at Rufford during 1936 was as under :—

Patients discharged	...	...	...	...	...	173 days.
Patients who died in the hospital	...	...	...	...	...	147 days.
Observation cases discharged	...	...	...	...	...	22 days.

Dr. Laird reports as follows :—

During 1936, 104 patients were admitted, 86 were discharged, and 16 died ; in addition, two cases sent in for observation and diagnosis were discharged. The number of deaths was appreciably less than in 1935, while the admissions and discharges were slightly increased.

Treatment was carried out as in the previous year by special methods such as artificial pneumothorax and gold therapy. Details of these and other measures may be summarised as follows :—

Artificial pneumothorax—							
Inductions	...	...	...	...	...	...	28
Ineffectual inductions	...	...	...	...	...	...	7
Refills	...	...	...	...	...	...	378
Ineffectual refills	...	...	...	...	...	...	19
Gold salts (injections)—							
Sanoecrysin	...	...	...	...	...	...	829
Crisalbine	...	...	...	...	...	...	39
Solganol	...	...	...	...	...	...	60
Aspirations—							
Clear fluid	...	...	...	...	...	...	19
Pus	...	...	...	...	...	...	4
Air	...	...	...	...	...	...	1
Ineffectual	...	...	...	...	...	...	3
Pleural irrigation	...	...	...	...	...	...	2
Paracentesis abdominis	...	...	...	...	...	...	1
Blood sedimentation tests	...	...	...	...	...	...	168
Calcium gluconate injections	...	...	...	...	...	...	190
Tuberculin injections	...	...	...	...	...	...	15
Eulykol injections	...	...	...	...	...	...	3
Salyrgan injections	...	...	...	...	...	...	3
Dental extractions	...	...	...	...	...	...	56
X-ray examinations—							
Screenings	...	...	...	...	...	...	954
Skiagrams	...	...	...	...	...	...	252
Sputum examinations (positive 411, negative 156)	...	...	...	...	...	...	567

While rest treatment occupies a prominent place as a routine at Rufford, it is not carried out to extremes, particularly when the psychic effect produced is an adverse one. Patients are encouraged to occupy themselves in needlework and similar crafts appropriate to their sex. Those who are fit are given walking exercise according to their condition, and recreation—other than physical—takes the form of whist drives, which are held fortnightly during the winter months as well as on special occasions. Concerts are also organised and during the year four were kindly given by parties from Preston, Burscough, and Rufford.

At Christmas, the patients organised a concert of their own, and the local choir as usual visited the hospital and rendered carols. Cinematograph entertainments were given about every two weeks during the winter months. These and certain other amenities, such as the provision of periodicals and books, were made possible through the kindness of the Tuberculosis Committee by special grants, and extra fare was provided for the patients and staff at Christmas from the same source. I should like to say how much the Committee's action is appreciated by all concerned.

The spiritual welfare of the patients was cared for by the clergy of various denominations.

A special visit was made to the hospital on the 7th July, 1936, by delegates to the annual congress of the Royal Sanitary Institute which was held at Southport. These visitors, numbering 50 or more, were received by County Alderman E. Boothman, Chairman of the Tuberculosis Committee, and County Councillor E. Clegg. An outline of anti-tuberculosis work under the County scheme was given by the Chairman of the Tuberculosis Committee, the Central Tuberculosis Officer, and myself, and a tour of the hospital was afterwards made as well as an inspection of the grounds.

The nurses were prepared for the examination of the Tuberculosis Association by the matron and myself. It is satisfactory to report that one nurse, who was the only entrant for both parts of the examination, was successful on the first occasion.

I have, as on former occasions, to record my indebtedness to the matron and other members of the staff for their cordial co-operation in conducting the work of the hospital.

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1936

(Definitely tuberculous, 1,113; doubtful, 7.) 1,120

Examinations by tuberculosis officer at—				Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of " <i>old</i> " cases and " <i>old</i> " <i>contacts</i> .
Patients' homes	...	...	...	141	481
Seaforth Chief Dispensary	...	...	...	338	1,535
St. Helens Branch Dispensary	...	...	...	115	656
Widnes Branch Dispensary	...	...	...	165	993
				<u>618</u>	<u>3,184</u>

Attendances of patients at the St. Helens Dispensary for artificial light treatment (61 individual patients)	1,715
Attendances for artificial pneumothorax treatment (57 individual patients)	497
Attendances for eulykol (hydriocarpates) treatment	134
Mantoux tests	10
X-ray examinations—	
Screenings	623
Skiagrams	887
Care committee meetings attended by—	
(a) Tuberculosis officers	2
(b) Tuberculosis health visitors	22
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals	60
Special visits by tuberculosis officers (<i>i.e.</i> , interviews with medical officers of health, general hospital officials, &c.)	6
Visits by dispensary nurses to patients' homes—	
Routine visits	4,400
Application of surgical dressings	299
Adjustment of splints and surgical appliances	101
Other actual nursing	12
	4,812
Patients' dispensary attendances for attention by nurses—	
Application of surgical dressings	302
Adjustment of splints and surgical appliances	13
	315
Sanitary defects reported to the local medical officers of health	51
Sanitary defects which after notification were remedied	34
Disinfections carried out by local sanitary authorities	304
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment <i>before</i> statutory notification	88·8%

XIX.—HIGH CARLEY SANATORIUM, OUBAS HOUSE CHILDREN'S SANATORIUM, AND FURNESS DISPENSARY AREA.

Medical Superintendent DR. G. LEGGAT.

(Dr. Leggat is also visiting medical superintendent of Oubas House Children's Sanatorium, Ulverston, and consultant tuberculosis officer for the Furness Dispensary Area—i.e., the area around the sanatorium—containing a population of 38,022).

Visiting Consulting Chest Surgeon ... MR. H. MORRISTON DAVIES.

Junior Visiting Consulting Chest Surgeon MR. F. R. EDWARDS.

Visiting Anaesthetist DR. J. HALTON.

Assistant Medical Superintendent ... DR. D. O. HUGHES.

Matron MISS E. WOOSEY.

(The matron is also responsible for the Oubas House Children's Sanatorium, Ulverston).

HIGH CARLEY SANATORIUM, NEAR ULVERSTON.

High Carley Sanatorium is situated about three miles west of Ulverston, to the south of the main road to Barrow-in-Furness. The buildings stand in 23 acres of ground, and accommodation is provided for 118 patients (60 males and 58 females) in 37 double cubicles, 4 single cubicles, 5 six-bed wards, and 5 double sleeping shelters.

The medical superintendent and the assistant are accommodated on the estate; and seven houses are provided in the vicinity of the sanatorium for the male employees.

Electricity is obtained from the public supply.

A treatment block was built in December, 1932, and contains on the ground floor an operating theatre, waiting and anæsthetic room, sterilising room, recovery room, artificial light room with a room adjoining for the sister, laboratory, x-ray room, dark room and sluice room; on the first floor five bedrooms and a sick room are provided for the staff.

The County Council in May, 1937, approved the sum of £18,633 for improvements and extensions as follows:—

Extension to treatment block.—Two recovery rooms, laboratory (present laboratory to be made into dentist's room), waiting room, store, surgeons' dressing and douche room with w.c., dispensary, lavatory, out-patients' and visitors' w.c.

Extension to administrative block.—Provision of assistant medical superintendent's sitting and dining room, and bedroom at the west end of the block.

New nurses' home, containing matron's quarters, bedrooms for 25 nurses recreation and reading rooms, sewing room, laundrette, kitchen, stores, linen room, box room, cloak room, drying room, shoe room and sanitary arrangements.

Extension to kitchen block.—New sitting room for maids, drying room and shoe room.

Consulting room.—New room to be provided at the rear of the duty room on the male and female pavilions.

Concert hall and chapel, to be built to the south of the female pavilion.

During the year, 164 County patients received from the visiting dental surgeon, Mr. A. Miller, some form of dental treatment, particulars of which will be found in Chapter XXVI.

The weekly maintenance charge for 1936-37 was £2 11s. 6d. per patient. This includes 4s. 9d. for loan charges, and 3s. 10d. for structural renewals and repairs.

The average length of stay of patients at High Carley during 1936 was as under :—

Patients discharged	...	...	...	...	...	235 days.
Patients who died in the sanatorium	...	...	...	...	...	229 days.
Observation cases	...	...	...	...	...	62 days.
Observation cases which died in the sanatorium	...	...	...	...	...	38 days.

Dr. Leggat reports as follows on treatment and administration :—

The number of patients admitted during 1936 was 167 ; 155 were discharged and 13 died. In addition, 30 cases were sent in for observation and diagnosis, 28 were discharged, and 2 died. Table 29 on page 94 shows the condition of the patients discharged.

Treatment.

I am still an ardent disciple of rest in the treatment of tuberculosis, even to the extent of splinting the lungs and fixing the patient in bed. Unfortunately, as I have to deal almost exclusively with an industrial population, I know that the majority of the patients will not stay the requisite length of time to give rest the chance of producing a cure ; more so does this apply to the male patients, and particularly where they are married and are the bread winners. The pull of a wife and children at home is too much for them, and as soon as they feel fit for work they want to get home. In the circumstances one is often forced to intervene surgically where otherwise one might stay his hand.

Artificial pneumothorax treatment.

Of the modern methods of surgical intervention, first and pre-eminent comes artificial pneumothorax, and I should like to combine with this thoracoscopy and division of adhesions which are a natural sequence to artificial pneumothorax. Artificial pneumothorax is generally accepted and so widely used now that little need be said in regard to it, but I should like to emphasise a few points :—

- (1) The object is to collapse and control the diseased area of the lung.
- (2) This selective collapse is best obtained by giving small amounts of gas at frequent intervals ; our average is 300 c.c. and rarely exceeds 500 c.c. Complications, such as fluid, are much less likely to occur with this technique. Do not be in a hurry, nothing is gained by haste, give the lung time to collapse.
- (3) Never hesitate to give up your pneumothorax if it is not producing the required collapse, nothing is gained by collapsing healthy lung and leaving a diseased area uncontrolled, other means of intervention should be considered.
- (4) If adhesions are present, thoracoscopy should be carried out, and if adhesions are divisible, then they ought to be divided. When this work was first tackled with diathermy the complications were many and the results disastrous. With the use of direct cautery and enucleation the complications have been few and the

results excellent ; fluid occurs in some cases, but it disappears on its own, or does so after one or two aspirations. The operation is often long and arduous and requires a tremendous amount of patience and skill on the part of the surgeon, and fortitude in the patient.

The number of patients continuing treatment from the previous year was 42 ; during 1936, 55 patients commenced this form of treatment resulting in 43 successful inductions (one case had bilateral induction) and 13 failures ; in addition 8 patients admitted to the sanatorium were already undergoing artificial pneumothorax treatment. Fluid, varying from a puddle upwards, developed in 46·5 per cent. of the cases with successful inductions.

Of the 92 patients in whom a successful induction had been obtained, 37 completed treatment during the year, 32 were still on treatment on the 31st December, 1 was transferred to another institution and 22 have ceased treatment for the following reasons :—Unsatisfactory collapse 8, no air pocket 2, obliterative pleurisy 5, fluid 3, persistent vomiting 1, obliteration of air pocket 1, dyspnoea 1, pyrexia 1.

Of the 37 patients who completed the treatment, 24 had positive sputum on commencement, which in 20 instances became negative, equal to a bacillary loss of 83·3 per cent. ; 19 had no ancillary treatment, and, of these, 14 had positive sputum on commencement, 12 of which became negative, giving a bacillary loss of 85·7 per cent.

The number of refills for sanatorium patients alone was 1,504.

The following Table 24 shows the sputum results of six cases in which thoracoscopy and division of adhesions were performed in 1936 :—

Case number.	Amount of sputum in drachms.		Result of sputum examination.	
	Before operation.	After operation.	Before operation.	After operation.
1	3	2	Positive	Negative 27-7-36, 17-8-36. Discharged 30-8-36.
2	1	3	Positive	Positive 20-6-36 on discharge.
3	4	2	Positive	Negative 18-9-36, 2-10-36. Discharged 15-10-36.
4	8	Specimens only	Positive	Negative 3 times to discharge on 16-7-37.
5	12		Positive	Positive 18-11-36, 18-12-36, 15-3-37 ; negative 16-4-37, 3-5-37, 28-5-37 ; no sputum to August 1937. Patient still in sanatorium.
6	4	4	Positive	Positive 19-2-37 ; negative 19-3-37, and 31-3-37 on discharge.

Phrenic nerve interruption.

Phrenicectomy has been carried out successfully for the release of basal adhesions, to assist artificial pneumothorax and, on occasions, to relieve an irritating cough ; in terminating an artificial pneumothorax, its use has also been demonstrated in reducing the size of the pneumothorax cavity. It is definitely contra-indicated when there is a possibility of a case being considered at a later date for thoracoplasty. In these cases, the temporary operation of phrenic crush has been the operation for choice. This crushing operation has also been employed

in cases where a temporary paresis was desired and, in a number of these, phrenicectomy has been performed at a later date.

The following Table 25 shows the sputum results in 11 cases in which the operation of phrenic crush was performed, and in 10 cases in which the operation of phrenicectomy was performed during 1936 :—

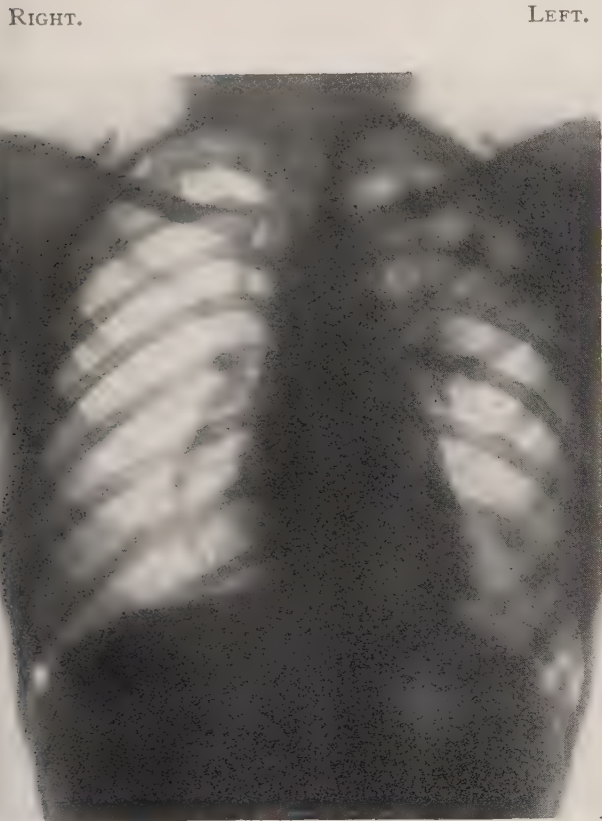
Case number.	Amount of sputum in drachms.		Result of sputum examination.	
	Before operation.	After operation.	Before operation.	After operation.
<i>Phrenic crush</i>				
1	4	8	Positive	Positive 4 times to discharge on 15-10-36.
2	24	52	Positive	Positive 7 times to discharge on 28-10-36.
3	6	1 to nil	Positive	Positive 9 times to discharge on 25-2-37.
4	3	1	Positive	Positive 2 times to discharge on 18-8-36.
5	4	12	Positive	Positive 6 times to discharge on 12-11-36.
6	Nil	Nil	—	—
7	12	12	Positive	Positive 5-8-36; negative 3 times to discharge on 18-8-36.
8	1½	1	Negative	Negative to discharge on 22-4-37.
9	4	4	Positive	Positive 25-11-36, 23-12-36, 26-2-37; negative 31-3-37, 14-4-37; positive 3-5-37; negative 3 times in June, 1937. Discharged 7-7-37.
10	8	4	Positive	Positive 4 times to discharge on 29-4-37.
11	8	4	Positive	Negative 13-1-37; positive 19-2-37; negative 6 times to discharge on 12-7-37.
<i>Phrenicectomy</i>				
1	Nil	Nil	—	—
2	Specimen only	2	Negative	Negative 4 times to 11-9-36; no sputum to 22-3-37; positive 22-3-37, 31-3-37. Discharged 5-4-37.
3	Nil	Nil	—	—
4	6	12	Positive	Positive 22-7-36, 24-8-36. Discharged 10-9-36.
5	1	2	Negative	Negative 5 times to discharge on 9-12-36.
6	4	4	Positive	Positive 13 times to August, 1937. Patient still in sanatorium.
7	28	28	Positive	Positive 10 times to August 1937. Patient still in sanatorium.
8	5	1	Negative	Negative 8 times to discharge on 11-2-37.
9	4	4	Positive	Positive 25-11-36, 16-12-36; negative 24-12-36, 30-12-36; positive 25-1-37; negative 7 times to August, 1937. Patient still in sanatorium.
10	1	Specimen only	Negative	Negative 4-12-36 on discharge.

Thoracoplasty.

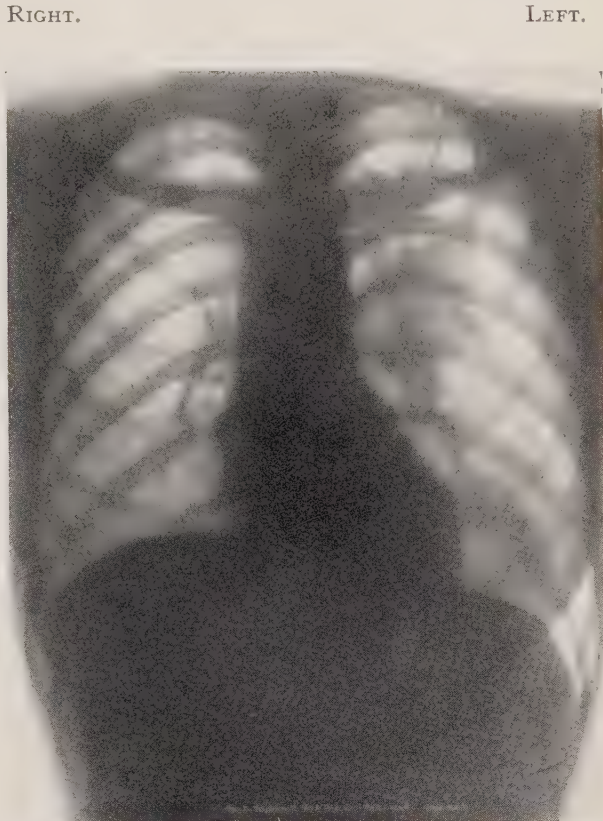
I think that we, as physicians, must admit failure in the treatment of cavities which do not respond to the simpler methods of collapse therapy, and we ought to be thankful that we have at hand highly-specialised thoracic surgeons to whom we can refer these cases for surgical intervention. If left uncontrolled, these thick-walled cavities are like volcanoes, liable to erupt and not only carry a stream of infectious lava into the neighbouring territory of the patient himself but death and destruction throughout the land. If by any surgical means we can control these cavities, relieve distressing symptoms, and prevent spread of infection in the patient himself and to others then, I think, it is our duty to provide facilities at all large modern sanatoria for such treatment to be carried out.

Major chest operations have been carried out at High Carley for the past three years, and the number of thoracoplasty operations has gradually but very materially increased. A great deal of extra work

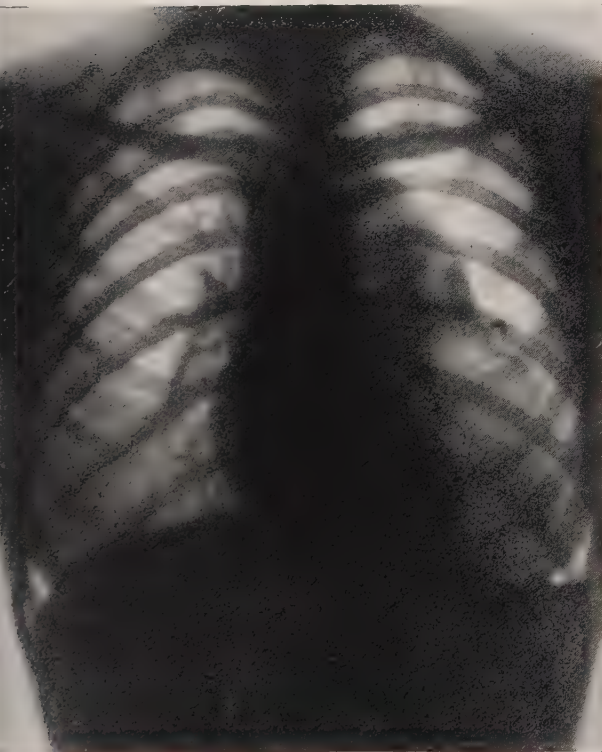
IMPROVEMENT OBTAINED IN COLLAPSE OF AN UNSATISFACTORY ARTIFICIAL PNEUMOTHORAX BY THORACOSCOPY AND DIVISION OF ADHESIONS.



H.C. 1(a).—E.B., female, aged 21 years. Skiagram taken 24-10-36 shows disease of the left lung involving the upper and mid zones, with multiple cavitation, and pleural thickening at the base. Right lung clear. Sputum 5 drachms daily, positive.



H.C. 1(b).—Same patient. Skiagram taken 25-11-36 shows an unsatisfactory collapse. Cavities still present in the upper zone, which is held out by numerous adhesions. Sputum reduced to 2 drachms daily but still positive.



H.C. 1(c).—Same patient. Skiagram taken 11-1-37 immediately after thoracoscopy and division of adhesions in which four adhesions were divided from anterior, lateral, and superior surfaces of apex. Shows marked improvement in the collapse with better control of the cavities. Small puddle of fluid at the costo-phrenic angle. Sputum reduced to specimen but still positive.

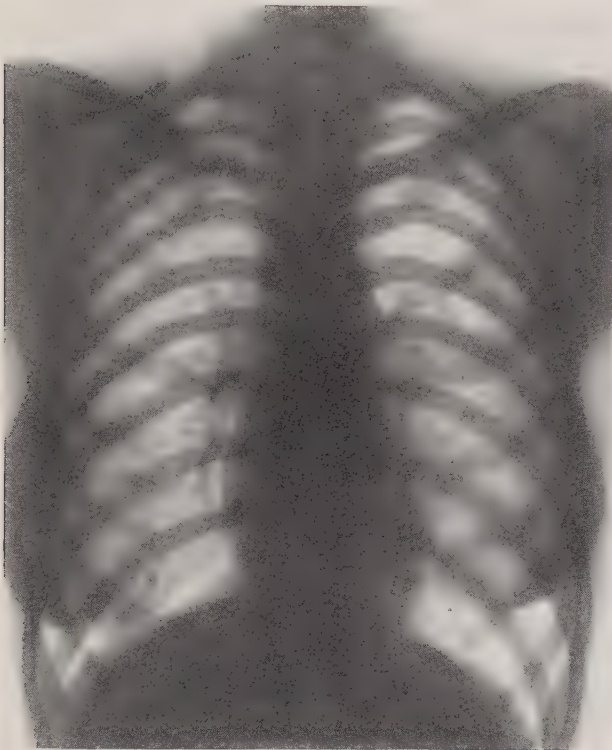


H.C. 1(d).—Same patient. Skiagram taken 19-7-37 shows the excellent collapse which has been obtained, with complete closure of the cavities. The small puddle of fluid at the costo-phrenic angle has cleared up. Sputum now persistently negative. Patient on full work and exercise.

IMPROVEMENT OBTAINED IN COLLAPSE OF AN UNSATISFACTORY ARTIFICIAL PNEUMOTHORAX BY THORACOSCOPY AND DIVISION OF ADHESIONS—*contd.*

RIGHT.

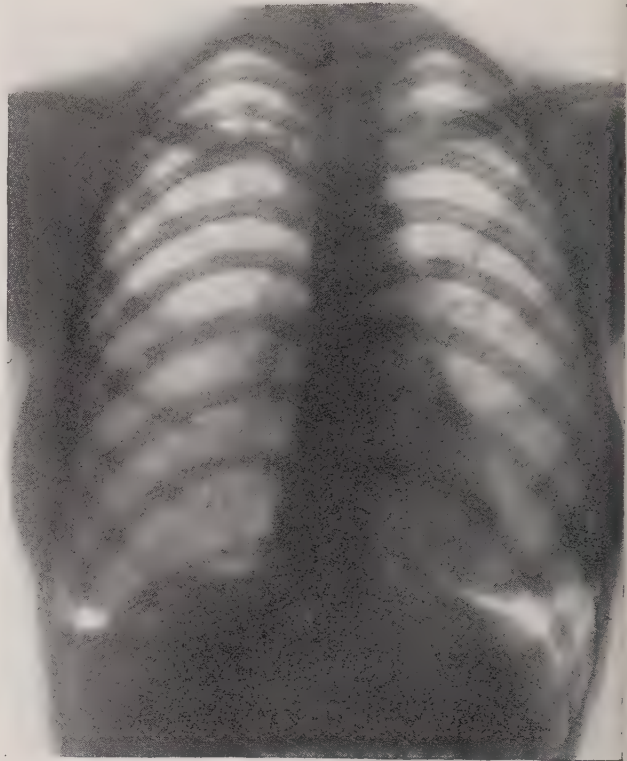
LEFT.



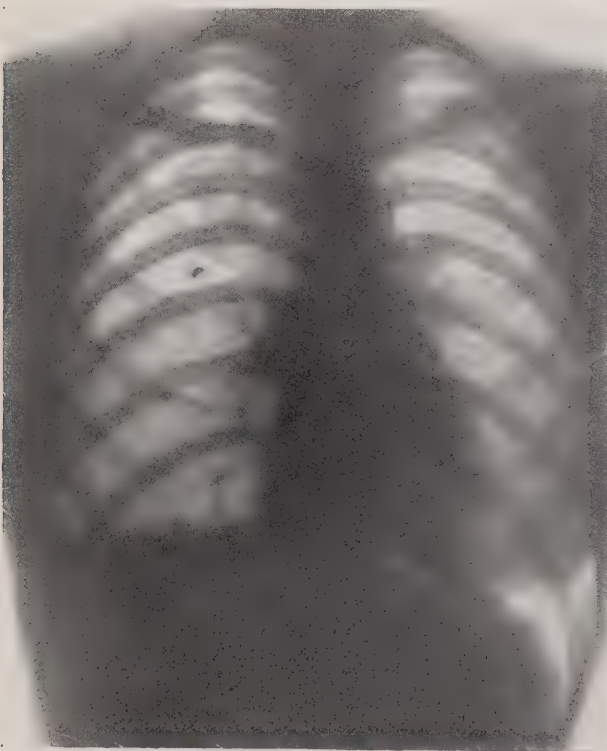
H.C. 2(a).—M.K., female, aged 16 years. Skiagram taken 10-10-36, on admission, shows disease involving the upper and mid zones of the right lung with an annular shape lying below the clavicle suggesting cavitation. Sputum 5 drachms daily, positive.

RIGHT.

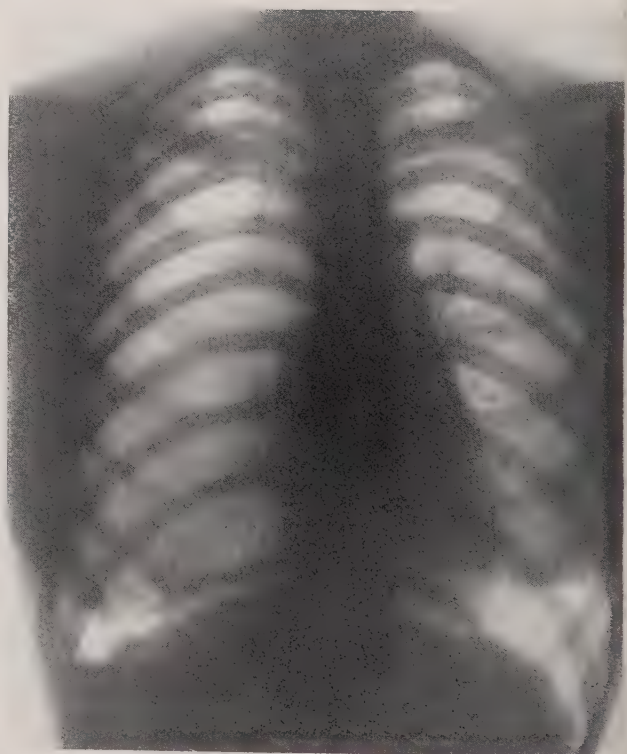
LEFT.



H.C. 2(b).—Same patient. Skiagram taken 30-11-36. Artificial pneumothorax has been maintained for one month, but shows an unsatisfactory collapse. The cavity is still present.

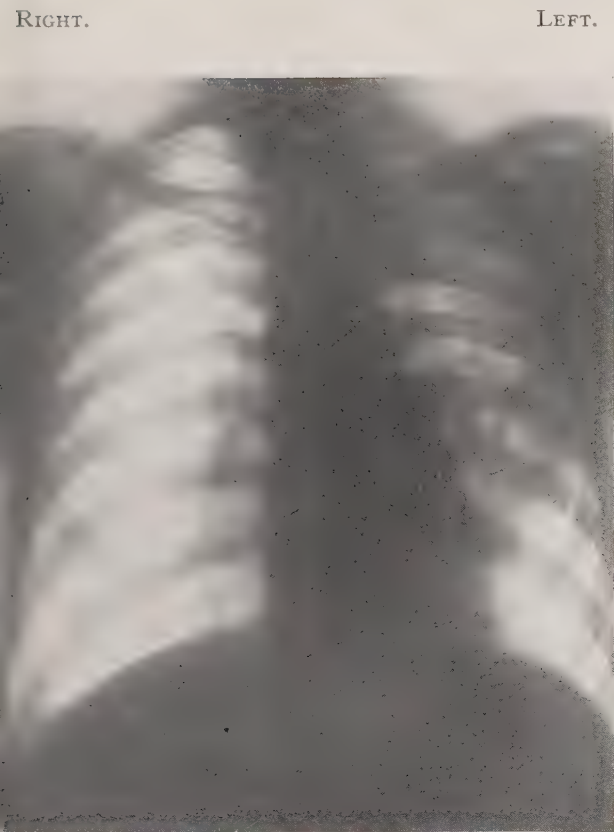


H.C. 2(c).—Same patient. Skiagram taken 11-1-37 immediately after thoracoscopy and division of adhesions, in which one large quadrilateral adhesion, 5.5 cm. long by 3 cm. broad, running to lateral aspect of chest wall was enucleated. One small adhesion running to sub-clavian artery was divided close to artery. Shows definite improvement in the collapse, the cavity at the apex being more apparent. There is a puddle of fluid at the costo-phrenic angle.

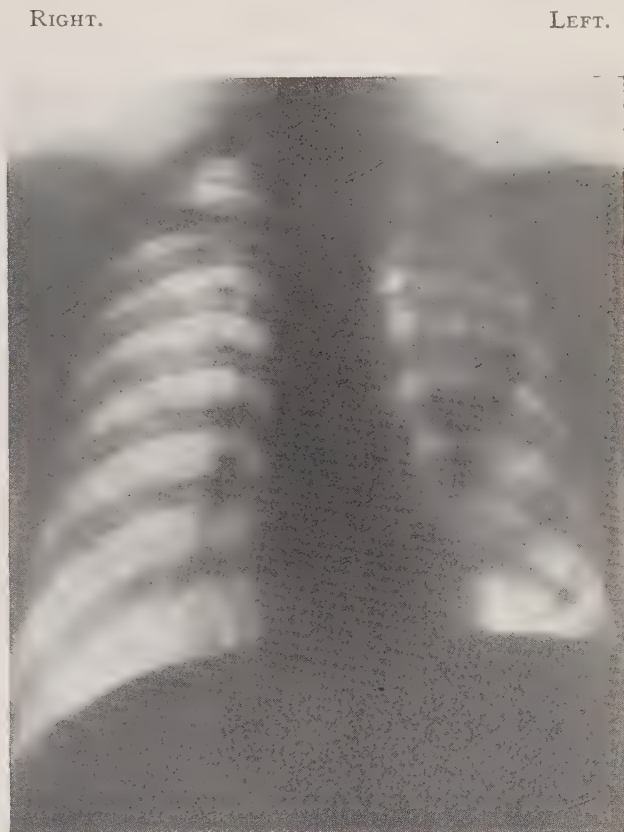


H.C. 2(d).—Same patient. Skiagram taken 12-7-37 shows a marked improvement in the collapse, with complete control of the apical cavity. The puddle of fluid is very much reduced. Sputum now persistently negative, and patient is on full work and exercise.

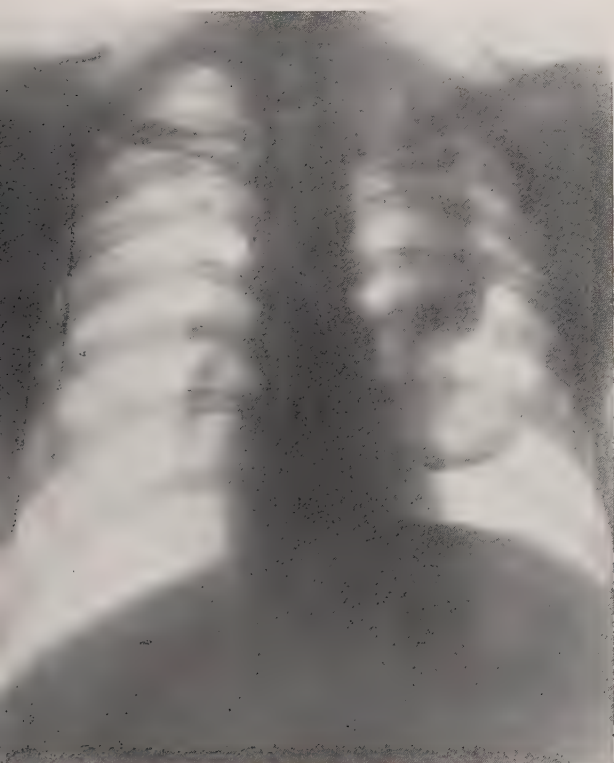
IMPROVEMENT OBTAINED IN AN ARTIFICIAL PNEUMOTHORAX BY PHRENICECTOMY.



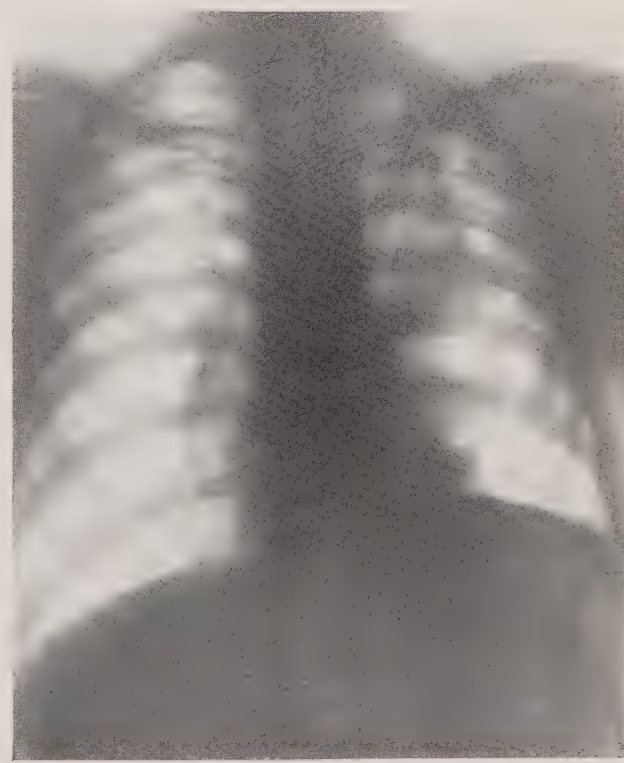
H.C. 3(a).—A.L., male, aged 34 years. Skiagram taken 7-11-36, on admission, shows disease involving the upper and mid zones and part of the lower zone on the left side.



H.C. 3(b).—Same patient. Skiagram taken 8-1-37 shows an unsatisfactory collapse with a puddle of fluid at the costo-phrenic angle after artificial pneumothorax has been maintained for about two months.



H.C. 3(c).—Same patient. Skiagram taken 5-3-37 shows marked improvement in the collapse following phrenicectomy.



H.C. 3(d).—Same patient. Skiagram taken 14-6-37 shows that the good collapse is still being maintained.

THORACOPLASTY.

RIGHT.

LEFT.



H.C. 4(a).—I.B., female, aged 35 years. Five years' history. Two previous periods of treatment in sanatoria. Frequent hæmoptysis. Skiagram taken 30-4-36, on admission, shows disease involving right lung with areas of cavitation in upper zone, general fibrosis and marked displacement of heart and mediastinum towards right. Left lung clear. Sputum 1-1½ ozs. daily, positive.

RIGHT.

LEFT.



H.C. 4(b).—Same patient. Skiagram taken 16-7-36 after removal of portions of first four ribs on right side.



H.C. 4(c).—Same patient. Skiagram taken 6-8-36 after removal of portions of second four ribs.



H.C. 4(d).—Same patient. Skiagram taken 10-12-36 after removal of portions of a further two ribs.

THORACOPLASTY—*contd.*

RIGHT.

LEFT.



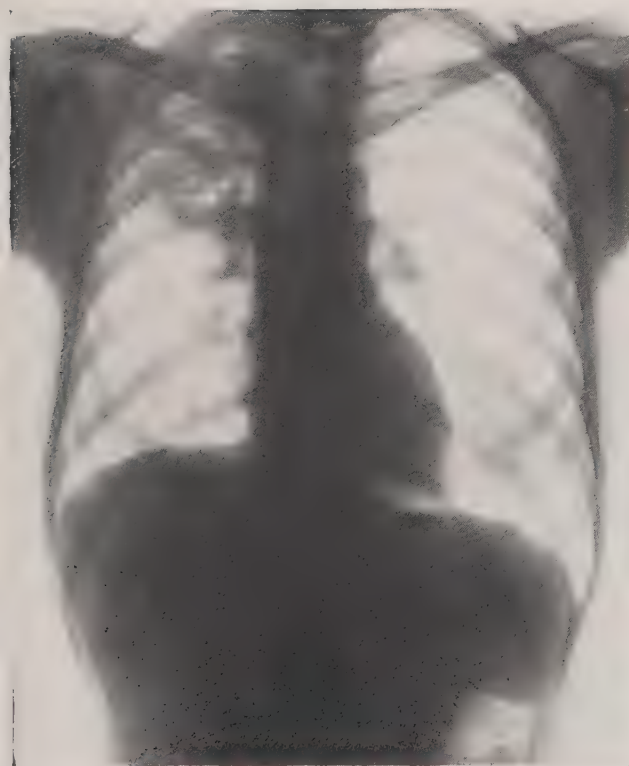
H.C. 4(e).—Same patient. Skiagram taken 7-3-37. Condition on discharge showing the good collapse which has been obtained as a result of the thoracoplasty. Heart now back in its normal position. Sputum nil and has remained persistently so since completion of the thoracoplasty. Patient is remaining fit since discharge.

RIGHT.

LEFT.

RIGHT.

LEFT.



H.C. 5(a).—E.S., female, aged 25 years. Skiagram taken 11-7-36 shows disease involving the upper and middle zones of right lung with multiple cavitation. Artificial pneumothorax tried but failed. Sputum 1 oz. daily, positive. Left lung clear.

H.C. 5(b).—Same patient. Skiagram taken 6-8-36 after removal of portions of first three ribs on right side.

THORACOPLASTY—*contd.*

RIGHT.

LEFT.



H.C. 5(c).—Same patient. Skiagram taken 31-8-36 after removal of portions of second and fourth ribs.

RIGHT.

LEFT.



H.C. 5(d).—Same patient. Skiagram taken 22-9-36 after removal of portions of a further three ribs.

RIGHT.

LEFT.



H.C. 5(e).—Same patient. Condition on discharge. Skiagram taken 7-3-37 shows the excellent collapse which has been obtained with complete closure of the apical cavities. Sputum cleared up rapidly after completion of the thoracoplasty; an occasional specimen was obtained which was persistently negative for tubercle bacilli. Patient has remained perfectly fit since discharge.

has been thrown on the staff as a result, but I am proud to report that it has been tackled by all in a helpful and cheerful spirit.

No patient is put forward for the operation of thoracoplasty without all the facts being fully explained. Very little difficulty has been experienced in getting patients to submit to the operation, and letters of gratitude and appreciation for the relief of symptoms and the renewed pleasure it has given them in their daily lives have been received from all those who have been discharged from High Carley.

The operation is a severe one but I, personally, have been greatly impressed by the very slight resultant deformity, the freedom of movement, and the power obtained in the muscles of the affected side. The almost entire absence of post-operative shock has been most striking, and also the rapidity with which the patient recovers from the anæsthetic.

The value of team work in surgery was very much impressed on my mind during the four years I spent in a casualty clearing station in France when surgical work had to be done under high pressure. At High Carley our visiting surgeon, Mr. Morriston Davies, has developed team work to a high level, and I am sure it is the means of our getting the good results we do now get.

Table 26 shows most excellent results after thoracoplasty in eight consecutive cavity cases completed during 1936 :—

Number of stages of operation.	Amount of sputum in drachms.		Result of sputum examination.	
	Before operation.	After operation.	Before operation.	After operation.
2	Nil	Nil	—	—
3	20	2	Positive	Negative 6 times to discharge on 19-8-36.
2	2	2	Positive	Negative 8 times to discharge on 7-8-36.
3	21	1	Positive	Positive 11-5-36, 24-7-36; no sputum 24-8-36; positive 9-9-36; negative 9-10-36 and 30-10-36 on discharge.
3	20	1	Positive	Negative 19 times to discharge on 2-6-37.
2	1	Specimens only	Positive	Negative 27-7-36, 17-8-36; positive 31-8-36; negative 5 times to discharge on 13-12-36.
3	12	4	Positive	Positive 21-8-36; negative 8 times to discharge on 8-3-37.
3	8	Specimens only	Positive	Negative 7 times to 13-1-37; no sputum 10-2-37 to discharge on 8-3-37.

Here inserted are skiagrams illustrating cases treated by modern chest surgery.

The interest in High Carley as a centre for thoracic surgery has spread widely, and we have been honoured by visits from several eminent thoracic surgeons and others who were interested, including :— Sir Matthew H. G. Fell, K.C.B., C.M.G., F.R.C.S., Mr. W. Anderson, O.B.E., F.R.C.S., of Aberdeen, Mr. G. A. Mason, F.R.C.S., of Newcastle, and Mr. G. Gordon-Taylor, O.B.E., F.R.C.S., of London.

Sanocrysin. The following Table 27 shows the position at the end of 1936 of 31 patients who received three or more grams of sanocrysin during 1933 :—

Classification.	Number of patients treated.	Nett number after deducting removals, etc.	Alive.		Dead.	
			Fit for work.	Not fit for work.	Number.	%
T.B. plus ...	24	16	8	6	2	12·5
T.B. minus ...	7	5	3	1	1	20·0
Total ...	31	21	11	7	3	14·2

At the end of treatment the bacillary loss of the cases still residing in the County area was 64·2 per cent. ; the present bacillary loss remains at 64·2 per cent.

Crisalbine. Twenty-two cases received this form of treatment during 1936, 2 continuing from 1935 and 20 commencing during 1936.

Treatment was abandoned in 9 cases for the following reasons :— Dermatitis 2, pyrexia 1, diarrhoea 3, vomiting 1, albuminuria 1, pyrexia and high pulse 1. In addition, one patient was discharged for other than medical reasons.

Of the remaining 12 cases, 9 completed a course of three or more grams and 3 were continuing at the year end.

At the commencement of the treatment, 7 of the 9 cases which received three or more grams had positive sputum, but on completion of treatment 4 had lost their tubercle bacilli, representing a bacillary loss of 57·1 per cent.

The x-ray appearances showed improvement in 77·7 per cent. of the cases, and the sedimentation rate in 87·5 per cent. ; reduction in amount of sputum was found in 88·8 per cent., and gain in weight in 100 per cent.

The number of injections during the year was 212.

The following Table 28 shows the position on the 31st December, 1936, of 20 patients who received three or more grams of crisalbine during the year 1933 :—

Classification.	Number of patients treated.	Nett number after deducting removals, etc.	Alive.		Dead.
			Fit for work.	Not fit for work.	
T.B. plus ...	15	12	8	4	—
T.B. minus ...	5	2	2	—	—
Total ...	20	14	10	4	—

On completion of treatment the bacillary loss of the patients still residing in the County area was 75·0 per cent.; the present bacillary loss is 83·3 per cent.

Dental work. I am sorry to report that the people of Lancashire still show a great deal of neglect in regard to the care of the teeth. It is little use trying to clean up the house if the front door is dirty. I should like to thank Mr. Miller for remedying the dental faults amongst the patients at High Carley.

Bacillary loss. During the year, 72 patients who had positive sputum on admission were discharged; the sputum on discharge in 30 of the cases had become negative*, giving a bacillary loss of 41·6 per cent. A careful record of the bacillary loss has been kept for a number of years and the average loss for the last twelve years is 32·7 per cent.

Sputum examinations. The sputum of patients is examined as follows:—Observation cases weekly, T.B. minus cases fortnightly, and T.B. plus cases monthly. During the year, 1,493 specimens of sputum were examined of which 635 were positive for tubercle bacilli.

Cultural examinations. During the year, 17 specimens of pleural fluid were set up for culture by the Lowenstein-Jensen method, four being found positive for tubercle bacilli. In addition, three specimens of pus from abscesses were set up and all these were positive for tubercle bacilli.

Patients' weights. Patients' weights are taken at weekly intervals; the average gain in weight of those who completed two or more months' treatment was as follows:—67 male patients, 13·19 lbs.; 54 female patients, 11·11 lbs.

Nurses' examinations. Probationer nurses are prepared for the examination held under the auspices of the Tuberculosis Association. During the year, four nurses sat for Part I and two passed, and two nurses who sat for Part II were both successful.

Occupational therapy. The forms of occupational therapy carried out during the year were:—Joinery, carpentry, wattle hurdle making, cane chair mending, gardening, and poultry keeping. Twenty-four wattle hurdles were made and despatched to various County sanatoria during the year.

Social activities. The usual outdoor games were provided during the summer months—bowls and clock golf for the men, and croquet for the women. Whist drives were held at frequent intervals and, during the winter months, the cinema entertainments were continued.

*Ziehl Neelsen method.

We have to thank several kind friends for bringing concert parties to entertain the patients and staff; the concerts were very much appreciated.

Church services. Church of England. Canon Kenworthy holds a service and visits each patient every Thursday, and holds a celebration of the Holy Communion on the last Tuesday in each month. Canon Kenworthy prepared nine patients for Confirmation, and the Bishop of Barrow-in-Furness very graciously visited the sanatorium for the Confirmation service.

Nonconformist. The Rev. D. J. Edwards retired at the beginning of the year, and we wish him happiness in his well-deserved retirement. So far, a successor has not been appointed in his place, and we have unfortunately not been able to have the usual Sunday service since he left.

Roman Catholic. Father Morrissey, from Ulverston, hears Confessions on one evening in every seventh week, and the following morning administers Holy Communion.

I should like to thank the reverend gentlemen who have so kindly ministered to the spiritual welfare of the patients.

Visits by Members of the Committee. We were honoured by a visit on the 4th January, 1936, from the Chairman of the County Tuberculosis Committee, County Alderman E. Boothman, who expressed satisfaction at the work being done at High Carley.

We are under a deep debt of gratitude to our visiting surgeon, Mr. Morrision Davies, not only for his great help surgically but also for giving to us the benefit of his wide experience and advice in treatment and diagnosis.

I should also like to thank the latest recruit to our surgical staff, Mr. F. Ronald Edwards, F.R.C.S., who has brought, in addition to his skill as a surgeon, youth and enthusiasm to stimulate our advancing years; the anæsthetist, Dr. John Halton; and my assistant, Dr. Hughes, for the great amount of help he has given me throughout the year.

The general increase in surgery and nursing has thrown a great deal of extra work on the matron and her staff, and I should like to thank Miss Woosey for the excellent manner in which she has coped with the situation, and the staff generally for the loyal assistance they have given.

Details of work carried out at High Carley during 1936 :—

Artificial pneumothorax—						
Inductions	...	...	...	...	...	55
Refills	...	...	...	...	...	1,504
Gas replacements	...	...	...	...	...	18
Withdrawals of gas	...	...	...	...	...	2
Withdrawals of fluid	...	...	...	...	...	3
Pressure tests	...	...	...	...	...	16
Thorascopic examinations	...	...	...	...	...	11
Division of adhesions	...	...	...	...	...	7
Phrenic nerve interruptions (phrenicectomy 12, phrenic crush 12)						
	...	...	...	...	...	24
Thoracoplasty operations	...	...	...	...	...	24
Injections of gold salts—						
Crisalbine	...	...	...	...	...	212
Solganol oleum-B	...	...	...	...	...	13
Oleo-sanocrysin	...	...	...	...	...	8
Other operations—						
Inter-pleura irrigations	...	...	...	...	...	34
Wounds opened and explored	...	...	...	...	...	1
Chest wall incised and drained	...	...	...	...	...	1
Manipulation and setting of fractures	...	...	...	...	...	2
Dressings and drainage	...	...	...	...	...	20
Dressings	...	...	...	...	...	90
Wounds stitched	...	...	...	...	...	1
Suturing of finger	...	...	...	...	...	1
Excisions	...	...	...	...	...	2
Incisions	...	...	...	...	...	8
Aspirations	...	...	...	...	...	17
Sinuses opened and drained	...	...	...	...	...	1
Sinuses opened and packed	...	...	...	...	...	78
Sinuses irrigated	...	...	...	...	...	24
Methylene blue injections	...	...	...	...	...	2
Lipiodol injections	...	...	...	...	...	9
Ear examinations...	...	...	...	...	...	2
Mantoux tests	...	...	...	...	...	18
Blood sedimentation tests	...	...	...	...	...	705
X-ray work—						
Screenings	...	...	...	...	...	1,917
Skiagrams	...	...	...	...	...	1,219
Laboratory examinations—						
Sputum (positive 635, negative 858)	...	...	...	...	...	1,493
Cultures—Lowenstein-Jensen method (pleural fluid 17, pus 3)						
	...	...	...	...	...	20

The numbers of patients afforded special treatment for the first time during 1936 were :—

Artificial pneumothorax—						
Attempted	...	...	...	...	...	55
Satisfactory	...	...	...	...	...	42
Unsatisfactory	...	...	...	...	...	13
Thoracoscopy	...	...	...	...	...	9
Division of adhesions	...	...	...	...	...	6
Phrenicectomy	...	...	...	...	...	10
Phrenic crush	...	...	...	...	...	11
Thoracoplasty	...	...	...	...	...	8
Gold salts (crisalbine)	...	...	...	...	...	20
Artificial light—local	...	...	...	...	...	16

The numbers of patients in High Carley on the 31st December, 1936, who were receiving special treatment were as follow :—

Artificial pneumothorax	27
Artificial pneumothorax with division of adhesions ...	3
Artificial pneumothorax and phrenicectomy ...	2
Phrenic crush	1
Thoracoplasty	6
Gold salts (crisalbine)	3
Artificial light—local	4

The following Table 29 shows the condition of patients discharged from the High Carley Sanatorium during the year 1936 :—

Classification on admission to the sanatorium.	Condition at time of discharge.	Duration of residential treatment in the sanatorium.					Total.	
		Under 28 days.	1—3 months.	3—6 months.	6—12 months.	More than 12 months.	No.	%
T.B. minus.	Quiescent	—	6	16	9	—	31	65.9
	Improved	1	4	3	1	1	10	21.3
	No material improvement	1	—	1	—	—	2	4.2
	Died in sanatorium ...	1	1	—	1	1	4	8.5
T.B. plus 1.	Quiescent	—	1	3	9	5	18	47.4
	Improved	2	2	6	6	3	19	50.0
	No material improvement	—	—	1	—	—	1	2.6
	Died in sanatorium ...	—	—	—	—	—	—	—
T.B. plus 2.	Quiescent	—	1	7	6	9	23	31.1
	Improved	1	6	4	12	9	32	43.2
	No material improvement	1	4	1	4	3	13	17.6
	Died in sanatorium ...	1	1	2	—	2	6	8.1
T.B. plus 3.	Quiescent	—	—	—	1	—	1	11.1
	Improved	—	—	1	—	2	3	33.3
	No material improvement	—	1	—	1	—	2	22.2
	Died in sanatorium ...	1	—	1	1	—	3	33.3
Diagnosis on discharge from observation.					Stay under 4 weeks	Stay over 4 weeks.		
Tuberculous					2	6	8	26.6
Non-tuberculous					3	14	17	56.6
Doubtful					1	2	3	10.0
Died*					1*	1†	2	6.6

Total ... 198

* Cause of death : Hæmoptysis, pulmonary abscess, and pneumonia.
† " " : Annular fibrillation, mitral stenosis, and rheumatic fever.

OUBAS HOUSE CHILDREN'S SANATORIUM, ULVERSTON.

The medical superintendent, assistant medical superintendent, and matron of the High Carley Sanatorium are also responsible for the work at Oubas House. The sister-in-charge is Miss D. Pope, and the certificated school teacher is Miss A. Gibson.

The house, the property of the County Council, stands in its own grounds (about one acre in extent), and accommodates 21 girls. Educational instruction is given to the children in conformity with the requirements of the Board of Education.

During the year, 8 patients received from the visiting dental surgeon, Mr. A. Miller, some form of dental treatment particulars of which are given in Chapter XXVI.

The weekly maintenance charge for 1936-37 was £1 16s. 4d. per patient.

The average length of stay of patients at Oubas House during 1936 was as under :—

Patients discharged	...	...	...	...	...	...	291 days.
Observation cases	...	...	...	...	...	...	171 days.

Dr. Leggat reports as follows :—

During the year, 14 patients were admitted and 14 were discharged ; their condition on discharge was :—Disease quiescent 9, improved 4, no material improvement (transferred to High Carley Sanatorium) 1. In addition, 12 cases were admitted for observation and diagnosis and 11 were discharged (5 of which were diagnosed as tuberculous).

There was a mild outbreak of chicken-pox during the year, six children being affected.

The Mantoux tuberculin test was carried out in 19 cases with the following results :—

Number of positive reactions after 0.1 c.c. of 1/10,000	9
Number of positive reactions after 0.1 c.c. of 1/1,000	4
Number of negative reactions	6

There were 68 specimens of sputum examined during the year, with the following results :—Positive 2, negative 66.

As in previous years, cases with positive sputum or those requiring specialised treatment were transferred to High Carley Sanatorium ; during the year, one such case was transferred.

The average gain in weight of patients discharged during 1936 was 10 lbs.

The teaching at Oubas House is of a very high standard, and it is found that the children on returning to their schools usually take a high place in the form. This is a great credit to Miss Gibson, and reflects the amount of trouble she must take in imparting knowledge to the children.

Miss Gibson's report in regard to the school is as follows :—

The work of the school is carried out on the lines laid down by the Board of Education.

Each child has her work arranged to suit her physical and mental capacity and as much variety as possible is introduced to make the subjects instructive and enjoyably interesting. Letter writing is a regular practice, and parents frequently send messages of appreciation.

Sir Thomas Tomlinson visited periodically during the year to mark the school register.

Lady Fell has made frequent visits during the year, and we are very grateful to her for the kindly interest she takes in the general welfare of the children.

I should like to thank others who have shown their interest by making numerous gifts to the children, especially at Christmas time.

My thanks are also due to Sister Pope for the great help she has given me, and the interest and care she has shown for the children.

FURNESS DISPENSARY AREA.

Area (estimated population 38,022) embraces Dalton-in-Furness, Grange-over-Sands, Ulverston, and Ulverston Rural districts.

Dr. Leggat sends the following report :—

The number of new cases and new contacts examined during the year 1936 was 146; of these, 41 were diagnosed as tuberculous, 102 as non-tuberculous, and at the end of the year, 3 cases still remained doubtful.

During the year, 235 skiagrams were taken and 97 screen examinations made at High Carley in regard to dispensary patients.

Seven patients from the dispensary area attended High Carley for artificial pneumothorax refills in continuance of their treatment after discharge from sanatoria. The number of refills during the year was 105.

The examination of sputum, as in previous years, was carried out at High Carley; 81 specimens were examined, 15 of which were positive for tubercle bacilli and 66 negative.

The percentage of new cases referred to me by medical practitioners, *etc.*, for an opinion as to diagnosis or treatment before statutory notification was 95·7 per cent. This percentage is an indication of the very close co-operation which is being maintained in this area with the practitioners, and I should once again like to thank the general practitioners in my area for their continued support.

I should also like to thank Nurse Duston for the great help she has been to me at the dispensary and in the area. The number of years she has been resident in the Furness Area has given her an intimate knowledge of the various families in the district, which has been an invaluable help in the dispensary work.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1936									
(Definitely tuberculous, 260 ; doubtful, 3)									

XX.—ELSWICK SANATORIUM AND FYLDE DISPENSARY AREA.

Medical Superintendent ... DR. G. B. CHARNOCK.

(Dr. Charnock is also consultant tuberculosis officer for the Fylde Dispensary Area—i.e., the area around the sanatorium—containing a population of 88,170).

Visiting Consulting Chest Surgeon ... MR. H. MORRISTON DAVIES.

Junior Visiting Consulting Chest

Surgeon ... MR. F. R. EDWARDS.

Assistant Tuberculosis Officer ... DR. J. N. WHYTE (1½ days per week).

Matron ... MISS A. JONES.

ELSWICK SANATORIUM, NEAR KIRKHAM.

This sanatorium is situated on the east side of Elswick village, and is about six miles from Kirkham station. The buildings and about 11 acres of land belong to the Fylde, Preston, and Garstang Joint Smallpox Hospital Board, and are held on lease by the County Council until 1955. The Council are under an obligation to vacate the premises in case of a severe epidemic of smallpox. Accommodation is provided for 38 males and 32 females ; total 70 pulmonary cases.

An x-ray apparatus is provided in a separate building.

A treatment block, built as an extension to the x-ray room, consists of operating theatre, sterilising room, consulting room, dressing rooms, and lavatory. This block also serves as a dispensary for out-patients from the southern part of the dispensary area and saves their attendance at the Fleetwood Dispensary.

During the year, 155 County patients received from the visiting dental surgeon, Dr. R. D. Allison, some form of dental treatment, particulars of which will be found in Chapter XXVI.

The weekly maintenance charge for 1936–37 was £2 19s. 11d. per patient ; this includes 5s. 4d. for structural renewals and 3s. 1d. for new x-ray apparatus.

The average length of stay of patients at Elswick during 1936 was as under :—

Patients discharged	...	...	...	...	...	...	178 days.
Patients who died in the sanatorium	...	...	...	...	...	...	156 days.
Observation cases discharged...	...	...	...	...	...	...	29 days.

Dr. Charnock reports as follows :—

During the course of the year, 122 patients were admitted, 106 were discharged, and 17 died. In addition, 16 cases were sent in for observation and diagnosis, and 16 were discharged. Table 30 on page 102 shows the condition of the patients discharged.

Since the last report the work of reconditioning the heating and lighting of the sanatorium has proceeded steadily and is almost completed. The gardens have been maintained in good order, and further efforts have been made to improve the garden on the male side. The new sanitary annexe on the male side has proved a very useful addition, and the modern heated shelters continue to be very popular. A new annexe on the female side is in course of construction.

The work of routine medical sanatorium treatment has continued as in former years. Long bed rest has given satisfactory results in most cases, and suitable cases have been found to benefit by prolonged stay in sanatorium. As an adjuvant small doses of gold have been found beneficial. The surgical treatment adopted consists of artificial pneumothorax, phrenic crush, phrenicectomy, internal pneumolysis and thoracoscopy. Patients recommended for major operations, *e.g.*, thoracoplasty, are automatically transferred to the High Carley Sanatorium.

Owing to the number of patients under surgical treatment and on bed rest, there are relatively few patients capable of work therapy. Those who are capable and willing to interest themselves in some of the activities of the sanatorium are encouraged to do so. Patients have engaged in fruit farming, pig, poultry and geese rearing, gardening, woodwork, painting, joinery, trenching, basket chair repairing, and wood chopping.

At the Great Eccleston Horticultural Show in September, 1936, a first prize and a third prize were awarded for apples grown at the sanatorium.

The inhalation treatment of tuberculosis was continued, with relief, in 60 per cent. of positive sputum cases. It is a valuable adjuvant to sanatorium treatment.

The infra-red apparatus has continued to give relief from pain when not arising from a basic neuritis.

A diathermy machine was obtained and the theatre suitably arranged in order that operations for thoracoscopy and internal pneumolysis could be undertaken. Two cases were successfully completed towards the latter part of the year.

A new x-ray apparatus was installed in October, and has proved satisfactory in all respects after six months' regular work. It embodies a shockproof combined couch and screening stand.

Great care is taken to ensure that the milk provided is pure and frequent tests, both chemical and bacteriological, are carried out to this end. The milk is always pasteurised before being given to the patients.

The recreation of the patients is well catered for. An up-to-date library is provided, and indoor games including billiards and darts are enjoyed. Bowls for the men and clock golf for the women are the main features of out-door amenities. The tennis court for the staff is in excellent condition. The wards and shelters are fitted with wireless loud speakers and head-phones, and there are modern gramophones in the male and female recreation rooms.

In regard to the training of nurses, the sanatorium has been approved as a teaching institution, and lectures are now being given to probationers and staff nurses in preparation for the examination for the certificate of the Tuberculosis Association.

The local clergy of all denominations have visited regularly. The Rev. E. E. le Bas, Congregational Minister of Elswick, has kindly consented to become Honorary Chaplain, and we welcome him to our staff. We are also indebted to the Rev. A. J. King and to Father T. Hall for their kind help during the year.

Visits were paid by me to the orthopædic hospitals at Leasowe and Heswall four times during the year to examine County patients undergoing surgical treatment. The patients appeared very happy, and the treatment ideal.

I attended by invitation the annual meeting of the Chorley and District Care Committee on the 19th March, 1936, and read a paper on "Radiation in Tuberculosis."

On various dates during 1936, Sir Thomas Tomlinson, and County Councillors E. Clegg and E. Tye visited the sanatorium, and inspected the wards and grounds.

Mr. H. Morriston Davies has continued to help with the surgical work, and his visits have been greatly appreciated. We were also glad to have the visits of Mr. F. R. Edwards.

In March, 1936, Dr. Fettes left to take up more responsible duties in another area, and we wish him every success.

I am obliged to Dr. Whyte for his help at Elswick and in the dispensary area, and to Dr. R. D. Allison for much co-operation with the dental work. To Miss Jones and her excellent nursing and domestic staffs, I tender my sincere thanks for their loyal assistance throughout the year. Mr. H. E. Langham, the sanatorium clerk and laboratory assistant, has again rendered constant and most valuable help.

Details of work carried out at Elswick during 1936 :—

Artificial pneumothorax—

Inductions	...	...	...	...	...	...	...	36
Refills	...	...	...	...	...	...	...	629
Division of adhesions	...	...	...	...	...	...	...	2
Phrenic nerve operations	...	...	...	...	...	...	...	20
Gold salts—								
Injections of crisalbine	...	...	...	...	...	...	...	17
Injections of solganol	...	...	...	...	...	...	...	62
Blood sedimentation tests	...	...	...	...	...	...	...	335
X-ray work—								
Screen examinations	...	...	...	...	...	...	...	667
Skiagrams	...	...	...	...	...	...	...	294
Laboratory examinations—								
Sputum (positive 234, negative 125)	...	...	...	...	...	...	...	359
Pus	...	...	...	...	...	...	...	3
Pleural fluid	...	...	...	...	...	...	...	1
Gasolene concentration tests	...	...	...	...	...	...	...	4

Numbers of patients afforded special treatment in the sanatorium for the first time during 1936 :—

Artificial pneumothorax—

Attempted	...	...	...	...	...	...	...	36
Satisfactory	...	...	...	...	...	...	...	16
Unsatisfactory	...	...	...	...	...	...	...	20
Phrenic evulsion, phrenicectomy, or phrenic crush	...	...	...	...	...	...	...	20
Gold salts (solganol, crisalbine)	...	...	...	...	...	...	...	8

Numbers of patients in Elswick on the 31st December, 1936, who were receiving special treatment :—

Artificial pneumothorax	...	...	...	...	...	...	...	15
Artificial pneumothorax and gold salts	...	...	...	...	...	...	...	2
Phrenic evulsion, phrenicectomy, or phrenic crush—								
Alone	...	...	...	...	...	...	...	5
In association with artificial pneumothorax	...	...	...	...	...	...	...	1
Gold salts	...	...	...	...	...	...	...	3

The following Table 30 shows the condition of patients discharged from the Elswick Sanatorium during the year 1936 :—

Classification on admission to the sanatorium.	Condition at time of discharge.	Duration of residential treatment in the sanatorium.					Total.	
		Under 28 days	1—3 months	3—6 months.	6—12 months.	More than 12 months.	No.	%
T.B. minus.	Quiescent	—	1	6	3	—	10	28·6
	Improved	1	3	9	6	1	20	57·1
	No material improvement	1	1	—	—	—	2	5·7
	Died in sanatorium ...	—	2	1	—	—	3	8·6
T.B. plus 1.	Quiescent	1	—	1	—	1	3	15·0
	Improved	2	3	4	5	1	15	75·0
	No material improvement	—	1	—	—	—	1	5·0
	Died in sanatorium ...	—	—	1	—	—	1	5·0
T.B. plus 2.	Quiescent	—	—	—	1	—	1	1·6
	Improved	1	5	17	12	4	39	62·9
	No material improvement	2	1	3	3	1	10	16·1
	Died in sanatorium ...	2	4	2	3	1	12	19·4
T.B. plus 3.	Quiescent	—	—	—	—	—	—	—
	Improved	—	2	2	—	1	5	83·3
	No material improvement	—	—	—	—	—	—	—
	Died in sanatorium ...	—	1	—	—	—	1	16·7
Diagnosis on discharge from observation.					Stay under 4 weeks	Stay over 4 weeks.		
Tuberculous					2	3	5	31·2
Non-tuberculous					6	4	10	62·5
Doubtful					1	—	1	6·2
Total ..							139	

FYLDE DISPENSARY AREA.

Area (estimated population 88,170) embraces Fleetwood, Thornton Cleveleys, Fylde Rural, Garstang Rural (part), Lytham St. Annes, and Kirkham districts.

Dr. Charnock reports :—

The present arrangements for the administration and medical work are satisfactory, and patients respond well.

Co-operation with medical colleagues continues to be cordial, and the various local authorities have willingly helped in many ways.

The artificial pneumothorax cases in the area have been attended to at Elswick, where screening and x-ray control have been carried out.

The administrative work has been undertaken at the Elswick Sanatorium, where, also, laboratory investigations have been made.

The County care fund has been of much assistance, and necessitous patients have been helped chiefly by the provision of clothing to enable them to go to sanatorium, and by supplies of groceries.

In conclusion my thanks are due to Nurse Tweedy and to Mr. Langham for their loyal help and co-operation, and to all medical colleagues who have helped in so many ways.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1936
(Definitely tuberculous, 414; doubtful, 2.) 416

	Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of " <i>old</i> " cases and " <i>old</i> " <i>contacts</i> .
Examinations by tuberculosis officer at—		
Patients' homes 	<u>90</u>	<u>421</u>
Fleetwood Dispensary 	112	679
Elswick Dispensary 	<u>80</u>	<u>265</u>
	<u>192</u>	<u>944</u>

Attendances of patients at the Fleetwood Dispensary for artificial light treatment (41 individual patients) 1,606

Attendances for artificial pneumothorax treatment (9 individual patients) 172

X-ray work—

Skiagrams 343

Screen examinations 199

Sputum examinations (positive 34, negative 188) 222

Gasolene concentration tests 2

Visits by tuberculosis officer to sanatoria, and pulmonary, special, and public assistance hospitals 17

Visits by dispensary nurse to patients' homes—

Routine visits 	1,415	} 2,004
Application of surgical dressings 	20	
Adjustment of splints and surgical appliances 	562	
Other actual nursing 	7	

Patients' dispensary attendances for attention by nurse—

Application of surgical dressings 	481	} 498
Adjustment of splints and surgical appliances 	17	

Sanitary defects reported to local medical officers of health 8

Sanitary defects which, after notification, were remedied 7

Disinfections carried out by local sanitary authorities 57

Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification 97·4%

XXI.—WRIGHTINGTON HOSPITAL AND WIGAN COUNTY DISPENSARY AREA.

<i>Medical Superintendent</i>	DR. E. H. A. PASK.
(Dr. Pask is also consultant tuberculosis officer for the Wigan County Dispensary Area—i.e., the area around the hospital—containing a population of 109,410).	
<i>Visiting Consulting Orthopædic Surgeons</i> ...	MR. T. P. McMURRAY.
	MR. HARRY PLATT.
<i>Visiting Consulting Ophthalmic Surgeon</i> ...	MR. H. H. BYWATER.
<i>Visiting Consulting Urological Surgeon</i> ...	MR. C. A. WELLS.
<i>Assistant Tuberculosis Officer</i>	DR. E. H. W. DEANE.
<i>Assistant Medical Superintendent</i>	DR. J. DOBSON.
<i>Junior Assistant Medical Officer</i> ...	DR. W. G. TIMMIS.
<i>Matron</i>	MISS E. MOSELEY.
<i>Assistant Matron</i>	MISS M. L. STRUDWICK.

WRIGHTINGTON HOSPITAL, APPLEY BRIDGE, NEAR WIGAN.

The Wrightington Hospital is situated close to the high road between Standish and Parbold, about six miles north-west of Wigan; altitude 300 feet above sea level. A scheme for the adaptation of the Hall as a nurses' home and the erection of new buildings to provide accommodation for 226 patients was adopted by the County Council and approved by the Ministry of Health towards the end of 1927. The first patients were admitted on the 14th December, 1931.

The accommodation provided is utilised as under :—

Adults : Three one-storey pavilions (two for men and one for women).	
One pavilion contains 30 beds, and at one end for isolation a small ward for four beds and two single cubicles ; the other two pavilions each contain 31 beds for non-pulmonary cases and at one end cubicles for 10 combined cases of pulmonary and non-pulmonary tuberculosis	
	118 beds.
Children : Two one-storey pavilions for non-pulmonary tuberculosis ; each pavilion containing 44 beds, and at one end a ward for four beds, and two single cubicles for isolation on admission ...	
	100 beds.
Isolation block for outbreaks of infectious disease	
	8 beds.
	<u>226 beds.</u>

All the buildings are heated.

In addition to the patients' pavilions, there are the following buildings :—Treatment block, kitchen block, official block, power house, laundry, quarters for nurses and maids (modern portion of the Hall and an annexe), medical superintendent's house, seven cottages for male employees, outbuildings (utilised for garages, workshops, stores, etc.).

The water supply is obtained from a well ($1\frac{1}{4}$ miles distant), which is the property of the County Council. Sewage works are installed on the estate. The electric light is from the public supply.

The capital cost of the Wrightington Hospital has worked out at £670 per bed with land, towards which the Ministry of Health made a grant of £40,680.

The Lancashire Education Committee have kindly arranged for lecturers to visit the institution to speak on social history and current events to adult patients; there are two part-time instructresses who teach handicrafts to both men and women. For the children there is a head teacher, with three assistants.

During the year, 148 patients received from the visiting dental surgeon, Mr. J. J. Ward, some form of dental treatment, particulars of which will be found in Chapter XXVI.

The weekly maintenance charge for 1936–37 was £3 1s. 6d. per patient; this includes 13s. 9d. for loan charges.

The average length of stay of patients at Wrightington during 1936 was as under :—

Patients discharged	...	...	...	...	...	295 days.
Patients who died in the hospital	...	...	...	...	...	238 days.
Observation cases discharged...	...	...	...	...	...	53 days.

Dr. Pask reports as follows :—

During the year, 306 patients were admitted, 273 were discharged, and 33 died. These figures show an increase of admissions and discharges compared with the previous year when 275 patients were admitted and 230 discharged, but the number of deaths shows a considerable decrease; in 1935 there were 50 deaths. Table 31 on page 106 deals with the patients who were suffering from tuberculous conditions, and shows the immediate results of treatment. It will be noted that 78, or 85 per cent., of 92 children were discharged with the disease quiescent, whereas of 184 adults 87, or 47 per cent., were discharged as quiescent, again emphasising the fact that in children the prognosis is much better than in adults; these figures show that it is almost twice as good. Of the 31 deaths of adult patients, 10 occurred in cases of combined pulmonary and non-pulmonary tuberculosis; this is a very large proportion and demonstrates the unfavourableness of the prognosis in this type of case.

TABLE 31. *Condition on discharge of 276 patients suffering from tuberculosis.*

LESION.	ADULTS.					CHILDREN.				
	Quies.	Imp.	Stat.	Worse.	Died.	Quies.	Imp.	Stat.	Worse.	Died.
Spine—										
Cervical	2	—	—	—	1	—	—	—	—	—
Dorsal	11	5	—	—	4	12	—	1	—	1
Dorso-lumbar	1	1	—	—	3	3	—	—	—	—
Lumbar	3	2	—	—	2	6	—	—	—	—
Hip	6	2	3	—	2	15	1	—	—	—
Great trochanter	—	1	—	—	—	—	—	—	—	—
Knee	8	1	—	—	—	11	1	—	—	—
Tibia	—	—	—	—	—	1	—	—	—	—
Ankle	2	2	—	—	—	2	—	—	—	—
Bones of foot	—	2	—	—	—	—	—	—	—	—
Shoulder	3	1	—	—	—	—	—	—	—	—
Elbow	1	1	—	—	—	1	—	1	—	—
Wrist	—	1	—	—	—	—	—	—	—	—
Rib	1	—	—	—	—	—	—	—	—	—
Sacro-iliac joint	2	1	—	—	—	—	—	—	—	—
Ischium	1	—	—	—	—	1	—	—	—	—
Lupus	1	3	1	—	*1	—	1	—	—	—
Peripheral glands	7	6	—	—	—	14	4	—	—	—
Peritonitis, etc.	11	2	1	—	2	7	—	—	—	—
Lungs	—	1	1	—	1	—	—	—	—	—
Genito-urinary	7	4	—	—	2	—	—	—	—	—
Fistula in ano	1	—	—	—	—	—	—	—	—	—
Abscess chest wall	1	—	—	—	—	1	—	—	—	—
Bursitis	2	—	—	—	—	—	—	—	—	—
Multiple lesions	7	4	3	—	3	2	2	—	—	1
Combined pulmonary and non-pulmonary	9	11	6	—	10	2	1	—	—	—
Total	87	51	15	—	31	78	10	2	—	2
	184					92				

*Cerebral embolism.

In addition to the 276 patients shown in Table 31, 20 adults and 10 children, the majority of whom had been admitted for observation purposes, were discharged as suffering from non-tubercular conditions.



W.1(a).—E.B., male, aged 34. Hypernephroma of right kidney with secondary deposits in spine. Skiagram taken after 20 c.c. uroselectan B intravenously shows a functionless right kidney due to hypernephroma. There is no outline of the pelvis and calyces to be seen on this side. (Note left side which shows the pelvis and calyces well outlined.)

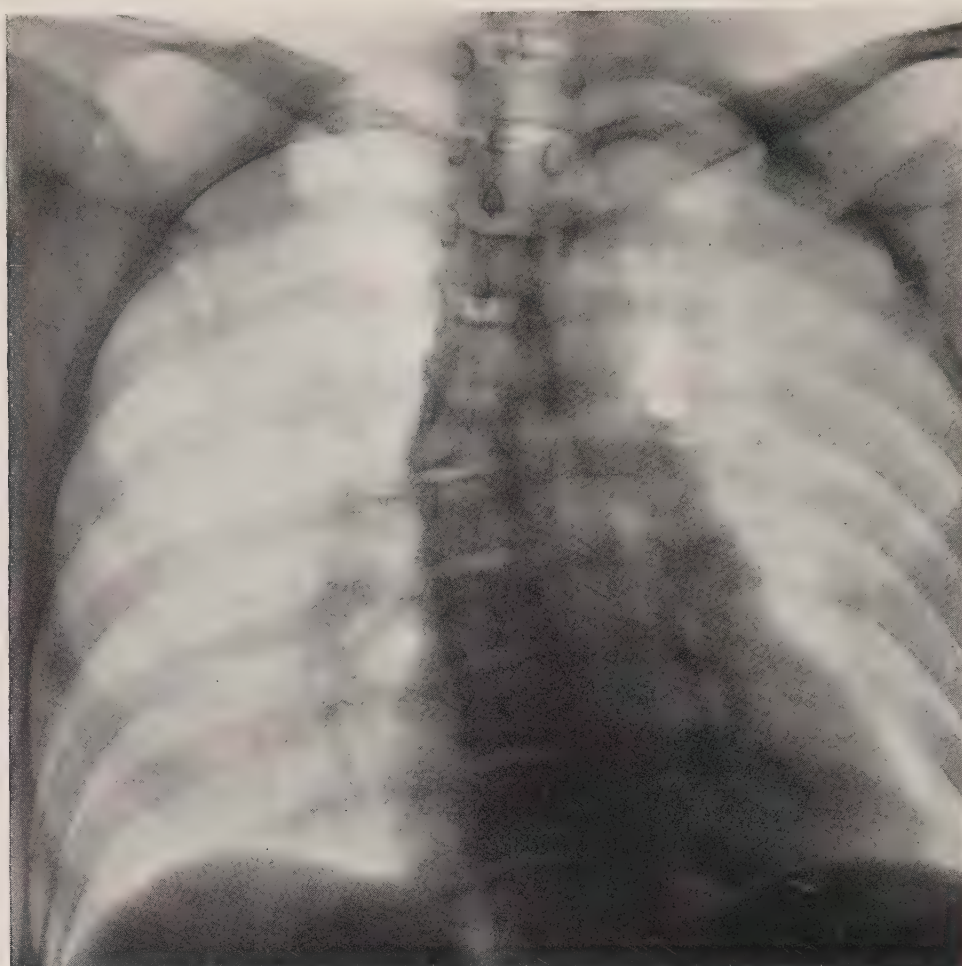


W.1 (b).—Same patient. There is a secondary deposit in the transverse process of the third lumbar vertebra on the right side. The transverse process is expanded by the growth and presents a jagged irregular reticulated appearance.

[Skiagrams taken at Wrightington Hospital.]

RIGHT.

LEFT.



W.1(c).—Same patient. Dorsal spine. There is scoliosis of the mid-dorsal spine with the convexity to the right due to a secondary deposit in the body of the sixth dorsal vertebra, which has resulted in compression of this vertebra on the left side.

[Skiagram taken at Wrightington Hospital.]

RIGHT.

LEFT.

These included cases of transient arthritis, osteo-arthritis, congenital torticollis, slipped epiphysis, scoliosis, sarcoma of tibia, carcinoma of tongue with malignant glands of neck, hypernephroma with secondaries in spine and sternum—see skiagrams W. 1 (*a*), 1 (*b*), and 1 (*c*).

A certain number of the orthopædic cases return to the hospital to be seen by the visiting consulting surgeons, and, of 170 such cases discharged during 1936, arrangements were made at the request of the surgeons for 11·8 per cent. to return to Wrightington on one or more occasions as out-patients.

The intravenous injection of uroselectan B has been employed in the investigation of renal tuberculosis in 69 cases. It is useful in that it gives a picture of the lesion, and from a series of skiagrams it also gives an indication of the excretory rate of the kidney. Before any operative intervention is undertaken it is usual to complete the investigation by cystoscopy, catheterisation of the ureter, and retrograde pyelograms.

Mantoux tests are done as a routine on all children on admission. Eighty-five tests were performed, and in all cases the result was positive. This is in accord with our previous year's findings, when all the tests were positive in children, so that in actual practice the test has proved of little value to us recently, and suggests that the number of children who are Mantoux-negative is becoming less with the progress of time.

The year has been an unfortunate one from the point of view of infectious disease among the children, outbreaks of mumps, measles, and chicken-pox having occurred. All children admitted are Schick tested for susceptibility to diphtheria, and the positive cases are treated with diphtheria prophylactic. At first the one-shot method was employed, alum precipitated toxoid being used, but this has been discarded owing to the fact that a considerable proportion (30 per cent.) were still Schick-positive after three months. We now use toxoid-antitoxin floccules, giving three doses of 1 c.c. at fortnightly intervals. Since immunisation has been adopted we have been singularly free from any diphtheria epidemic in the hospital.

During the year, 460 blood sedimentation tests have been made.

Artificial pneumothorax was induced in one combined case, and 17 refills were done. One case had a gas replacement.

Fourteen patients received sanocrysin treatment, and the injections numbered 129. Some combined cases were treated, mainly with a view to improving the pulmonary lesion, with beneficial results. A case of Bazin's disease improved considerably after a course of treatment.

The following is a list of operations performed during 1936 :—

Amputation (arm 3, leg 4, foot 2)	...	...	...	...	9
Arthrodesis of knee	...	...	...	...	2
Arthroplasty of hip	...	...	...	...	1
Biopsy for diagnosis	...	...	...	...	3
Closure of faecal fistula	...	...	...	...	1
Curettage (bursa 1, glands neck 4, abscess rib 1)	...	...	...	...	6
Cystotomy (supra-pubic)	...	...	...	...	1
Epididymectomy	...	...	...	...	3
Excision of bones and joints (sacro-iliac 1, metatarsal 1)	...	...	...	...	2
Excision of glands neck	...	...	...	...	10
Excision of fistula in ano	...	...	...	...	1
Excision of cyst of labia minora	...	...	...	...	1
Exploration of sinuses	...	...	...	...	1
Fixation of spine (Albee)	...	...	...	...	1
Joint manipulation under general anaesthetic (knees, ankles, hips)	...	...	...	...	4
Litholapaxy	...	...	...	...	1
Nephrectomy	...	...	...	...	4
Resection of rib	...	...	...	...	3
Removal of ureteric calculus	...	...	...	...	1
Sequestrectomy (hip 1, sternum 1)	...	...	...	...	2
Transtrochanteric osteotomy	...	...	...	...	1
Tenotomy of sterno-mastoid	...	...	...	...	1
Minor operations—					
Aspiration of abscess	...	...	...	...	301
Aspiration of chest	...	...	...	...	11
Amputation of toe	...	...	...	...	1
Cystoscopy	...	...	...	...	13
Exploration of chest	...	...	...	...	6
Hydrocele tapped	...	...	...	...	3
Incision of abscess	...	...	...	...	31
Incision of Bartholin's gland	...	...	...	...	1
Paracentesis abdominis	...	...	...	...	7

There were 120 plasters applied, and 50 casts taken for the making of celluloid splints. Cases of tuberculosis of the hip are discharged wearing a celluloid support; patients with Pott's disease affecting the upper and lower extremities of the spine are fitted with celluloid back supports when they become ambulant, the cervical and upper dorsal regions having a head support; and in the lower lumbar cases the pelvis and one hip are incorporated.

The artificial light department has worked to full capacity, and 284 cases received treatment during 1936, which is an increase of 70 cases compared with the previous year. Artificial light proves a very useful adjunct to orthopaedic treatment and acts as a general tonic. It is not beneficial in every case, and occasionally it has been found necessary to discontinue it. The lamps used and the limits of exposure have been those described in previous reports. A few cases of lupus, which proved resistant to light treatment at the County dispensaries, have been treated with injections of hydnocarpate oil into the lesion, with beneficial results.

During the year, 28 post mortem examinations were carried out. These are undertaken wherever possible, and it is interesting to note that permission was granted in 28 cases out of 33 during the year; as a rule, very little difficulty is encountered from the relatives. Since the hospital was opened, over 100 autopsies have been performed and, as a result, a very interesting collection of pathological specimens is being made and valuable information obtained. A most unusual case of giant cell tumour of the cervical spine occurred, the diagnosis of which would have been impossible without autopsy and subsequent microscopic examination of the specimen.

Laboratory work.—Examinations of the following specimens were made during the year in the hospital laboratory :—Urine, 31 ; blood, 2 ; pus, 1. Sputum : hospital patients, 71 (positive 28, negative 43) ; dispensary patients, 572 (positive 89, negative 483).

Material for guinea-pig inoculation and special pathological investigation, which was sent away for examination, consisted of :—

Inoculation tests : Ascitic fluid, 1 ; urine, 66 ; pleural fluid, 3 ; cerebro-spinal fluid, 1 ; pus, 10.

Histological examinations : Astragalus, 1 ; Bartholin cyst, 1 ; diaphragm, 1 ; femoral artery, 1 ; lymphatic glands, 3 ; supra-renal, 1 ; liver, 1 ; spleen, 1 ; gastric ulcer, 1 ; transverse colon, 1 ; osteochondroma vertebra, 1 ; enchondroma radius, 1 ; lupus face, 1.

Blood urea, 10.

Microscopic examinations : Urine, 17.

In addition to that of the hospital, the x-ray work of the Wigan County Dispensary Area is done at Wrightington. During 1936 the following skiagrams were taken :—

Wrightington Hospital patients, 1,685 ; Wigan County Dispensary Area patients, 587.

Cultivation of tubercle bacilli. Dr. Dobson reports as follows :—

During the year we have continued the use of Lowenstein's medium for the culture of the tubercle bacillus. The technique employed has been the same as that described in previous articles, with one slight modification, *i.e.*, the length of time that the specimen is incubated with 4 per cent. NaOH has been increased to 30 minutes. By this means the number of tubes contaminated by secondary infection has been decreased. Now that the method has proved of definite value it has been restricted to material from cases in which the diagnosis has been in doubt, although this does not mean that where the culture has been negative the case has not been one of tuberculosis.

Fifty-six specimens of various types of material have been submitted for culture, and of these 20, or 35·7 per cent., have been positive.

The specimens submitted and the results were as follow :—

TABLE 32.

Type of material	Number of cultures made	Result		
		Positive	Negative	Percentage positive
Sputum	22	4	18	18·1
Pus	20	13	7	65·0
Urine	11	3	8	27·2
Pleural fluid	3	—	3	—
Total	56	20	36	35·7

Most of the specimens of sputum have come from the Wigan County Dispensary, and all have been persistently negative on microscopical examination.

Specimens of urine put down for culture have also been submitted to the guinea-pig inoculation test. The results tend to show that the animal inoculation is, on the whole, the more reliable test. The following statement gives the results in detail :—

Culture positive, guinea-pig positive	...	...	...	2
„ positive, „ negative	...	...	...	1
„ negative, „ positive	...	...	...	3
„ negative „ negative	...	...	...	5

Mr. H. Platt, Mr. T. P. McMurray, and Mr. C. A. Wells, the consulting surgeons, have visited the hospital monthly. Their valuable advice and help have been much appreciated.

Mr. H. H. Bywater has visited the hospital on three occasions to see eye cases which have been referred to him. Weekly visits have been made by Mr. J. J. Ward, the dental surgeon.

Visits were paid to the hospital during the year by :—

Chartered Society of Massage and Medical Gymnastics
(Liverpool Branch).

Electrical Association for Women (Ormskirk Branch).

Delegates to the Annual Congress of the Royal Sanitary Institute.

British Medical Association (Preston Branch) and Preston Medico-Ethical Society.

Tyldesley Co-operative Guild (Women Members).

Post-Graduate Class, M.Ch. (Orth.), Liverpool University.

The kindly ministrations of our three chaplains, Rev. C. E. Brett (Church of England), Rev. W. Gainsborough (Nonconformist), and Father Barry (Roman Catholic), have been much appreciated. On the 21st November, 1936, we were honoured by a visit from the Bishop of Blackburn, who held a Confirmation service; eleven patients were confirmed.

We are indebted to many friends who have visited the institution to entertain the patients. Numerous concerts and entertainments have been given in the various wards during the year. During the winter months the Kodascope was used weekly for cinema programmes. The annual Christmas pantomime given by the children (reported on by Mrs. Keyworth, the head teacher) was repeated for the benefit of their relatives on visiting day and was much enjoyed by them.

The adult education classes continue to be popular, and I consider they now have a definite place in our hospital routine; the lectures, given by Mr. James and Mr. Bruce, have been attended regularly, as also the handicraft classes supervised by Miss Roll and Miss Forster. Reports from discharged patients indicate that their incomes have been supplemented by the making of articles in their homes as a result of the instruction received at Wrightington.

Mrs. Keyworth, the head teacher, reports as follows:—

Number of children admitted during the year	...	...	...	192
Number of children discharged during the year	...	...	...	106
Average number on register	...	...	...	89
Average attendance	...	...	...	87

Continuous and steady progress has been maintained through the school during the year. The individual system continues to prove a success and a tremendous impetus to the badly retarded child. A very small percentage of the children have attained the average standard found in the elementary school; the remainder are retarded in varying degrees, but by no means are they uneducable or dull—quite the reverse. As soon as they become used to their surrounding conditions, learn to rely on themselves, and cease to dwell on their handicap, then they make rapid headway and there is nothing to stop their progress.

Suffering from lack of exercise, children in hospital, especially those who stay in for a long period, have a small amount of personal experience and depend on reading and hearsay for their store of knowledge. The object of the school, therefore, is to educate as well as to instruct and to give the children a reliable and accurate store of conceptions based on fact and experience. The lessons are looked forward to and pass all too quickly for the eager children.

In the girls' ward, plain and fancy needlework, knitting, soft-toy making, and weaving have been done throughout the year. The weaving of bags and scarves has been very successful, the girls attaining a high standard of proficiency, so that when discharged they have reached that stage where they are able to set up a loom and make a scarf without any supervision. Several discharged patients have bought looms and are making scarves in their own homes.

In the boys' ward, much of the advanced handwork has lapsed owing to a lower average age. Metal overlay, white-wood painting, and wood carving have been temporarily laid aside, but basketry, rug making, and even needlework are carried out and executed with great credit to the younger boys, especially by those whose correct positions in bed must be maintained, and who are always the most anxious to express themselves and are the most persevering.

Exhibitions of handwork were made on the occasion of the visit of delegates to the Annual Congress of the Royal Sanitary Institute on the 8th July, and on the 9th July when the members of the British Medical Association (Preston Division) also visited the hospital.

The Lancashire Education Committee again arranged for a space in their pavilion at the Royal Lancashire Agricultural Show at Blackpool to be occupied by the children's handwork. This exhibition was so much appreciated by the public that an invitation has been extended to exhibit at Manchester at the next Royal Show.

The sum of £31 6s. 9d. has been handed in for the sale of children's handwork during the year, bringing the total amount to £267 14s. 8d.

There has been no inspection by the Board of Education this year.

The ambulant children attend their daily dancing class, and take nature walks during suitable weather.

The annual pantomime was again written and produced by Miss Crabbe; it was enthusiastically played by children of all ages—*Dick Whittington* being their own choice. This annual event is proving to be invaluable to those children who suffer from extreme nervousness and a sense of inferiority. It gives them self-reliance, and the most badly handicapped of all realise that by sheer determination they can hold their own amongst the less handicapped.

Eight probationer nurses completed their two years' training and gained the hospital leaving certificate. One nurse returned to Wrightington as a staff nurse from one of the affiliated hospitals, having completed her general training and become a State Registered Nurse. She was one of the first nurses from here who passed her Preliminary State Examination. It is hoped in the future that we may get more of our probationer nurses, who have completed their general training at affiliated hospitals, returning to take up positions as staff nurses and so helping to relieve our chronic shortage of nursing staff.

My thanks are due to my assistants, Dr. Dobson and Dr. Timmis, the matron, Miss Moseley, and the nursing and clerical staffs for their loyal help and co-operation, which has contributed to the smooth working of the hospital.

Details of work carried out at Wrightington during 1936 :—

Artificial pneumothorax—

Inductions	...	...	...	...	...	...	...	1
Refills	...	...	...	...	...	...	...	17
Gas replacements	...	...	...	...	...	...	...	1

Gold salts—

Injections of sanocrysin	...	...	...	...	...	...	129
Hydnocarpate oil injections	...	...	...	...	...	...	89
T.B. vaccine injections	...	...	...	...	...	...	169
Uroselectan injections	...	...	...	...	...	...	69
Blood sedimentation tests	...	...	...	...	...	...	460
Mantoux tests	...	...	...	...	...	...	85
Lipiodol injections	...	...	...	...	...	...	14

X-ray work—

Screen examinations	...	...	...	...	...	...	120
Skiagrams	...	...	...	...	...	...	1,685
Sputum examinations (positive 28 ; negative 43)	...	...	...	...	...	...	71
Barium meals, etc....	...	...	...	...	...	...	8

Numbers of patients afforded special treatment in Wrightington for the first time during 1936 :—

Artificial pneumothorax—

Attempted	...	...	...	...	...	...	...	2
Satisfactory	...	...	...	...	...	...	...	1
Unsatisfactory	...	...	...	...	...	...	...	1
Sanocrysin	...	...	...	...	...	...	...	14
Hydnocarpate oil	...	...	...	...	...	...	...	6
T.B. vaccine	...	...	...	...	...	...	...	11

Numbers of patients in the hospital on the 31st December, 1936, who were receiving special treatment :—

Artificial pneumothorax	...	...	...	...	...	...	...	2
Hydnocarpate oil	...	...	...	...	...	...	...	3
T.B. vaccine	...	...	...	...	...	...	...	4
Artificial light	...	...	...	...	...	...	...	114

ARTHRODESIS IN TUBERCULOSIS OF THE HIP JOINT.

The treatment of tuberculous arthritis of the hip joint is essentially conservative in character ; rest, fixation of the joint, good food, open air, and other aids to improvement in the general condition of the body are all necessary but, whilst conservative treatment must remain the bulwark in our armamentarium, there are certain indications and clinical conditions which show the necessity for fixation of the joint by arthrodesis. These may be summarised as follows :—

1. Old-standing disease in which there is increasing deformity.
2. Cases in which, after one or more periods of conservative treatment, there is recurrence of the disease, due time being allowed for the lesion to subside before operation is undertaken.
3. Persistent chronic pain in a joint which appears otherwise quiescent.

Over a period of $4\frac{1}{2}$ years, 131 patients (76 adults and 55 children) have been admitted to Wrightington Hospital with tuberculosis of the hip joint and the operation has been performed in 11 cases (9 adults and 2 children), *i.e.*, 8·4 per cent. of the total. It is most important that a careful selection of cases should be made and it is our practice only to operate when the disease may be said to be reasonably quiescent ; to operate when there is activity is definitely contra-indicated. In this series only two children were operated on ; both were 14 years of age, and the disease had been present for seven years. In very young children such an extensive operation is never justifiable. Arthrodesis of the hip is not a life-saving measure ; its purpose is the conversion of a weak, yielding ankylosis into a sound, immobile, painless fixation which will not yield to weight bearing and will not alter its angle at a later date.

In the following Table 33 particulars are given of the 11 patients upon whom the operation was performed :—

Patient, age, sex, and occupation.	Duration of disease.	Indications for operation.	Date and nature of operation.	Result at end of 1936.
No. 1. F.V.T., male, aged 28, piecer in mill.	5 years.	Flexion and adduction deformity with subluxation of hip.	29-9-32. Intra- and extra-articular arthrodesis.	Firm ankylosis ; working at normal occupation.
No. 2. W.C., male, aged 23, clogger.	11 years.	Severe flexion and adduction deformity.	23-5-33. Intra- and extra-articular arthrodesis.	Firm, bony ankylosis ; unemployed, but fit for work.
*No. 3. P.M., female, aged 17, none.	9 years.	Flexion, adduction and internal rotation.	3-9-33. Intra- and extra-articular arthrodesis.	Firm, bony ankylosis ; fit for light work.
No. 4. M.B., female, aged 33, domestic.	6 months.	Early localised disease.	27-12-33. Extra-articular arthrodesis.	Firm ankylosis ; fit for work.
No. 5. I.G., female, aged 14, scholar.	8 years.	Pain and recurrence of adduction deformity after transtrochanteric osteotomy.	23-7-33. Intra- and extra-articular arthrodesis.	Firm ankylosis ; at school.
*No. 6. M.F., female, aged 22, weaver.	7 years.	Flexion and adduction deformity.	18-3-34. Intra- and extra-articular arthrodesis.	Firm ankylosis ; doing domestic duties at home.
*No. 7. B.S., female, aged 14, scholar.	7 years.	Increasing deformity and pain after using limb.	24-6-34. Intra- and extra-articular arthrodesis.	Firm ankylosis ; at school and studying for scholarship.
No. 8. J.F.B., male, aged 22, farm labourer.	1½ years.	Persistent pain in spite of 18 months' conservative treatment.	7-4-35. Intra- and extra-articular arthrodesis.	Died 30-6-36—multiple sinuses. (Graft had united with firm ankylosis).
No. 9. C.H., female, aged 23, paper bag maker.	6 years.	Recurrence of pain with adduction deformity, after several periods of conservative treatment.	7-4-35. Intra- and extra-articular arthrodesis.	Moderately firm ankylosis ; working at normal occupation.
No. 10. W.B., female, aged 23, packer.	9 years.	Persistent pain when ambulant.	17-11-35. Intra- and extra-articular arthrodesis.	Firm ankylosis ; working as packer.
No. 11. E.L., female, aged 21, weaver.	2½ years.	Unstable joint with mobility due to weak fibrous ankylosis.	17-11-35. Extra-articular arthrodesis.	Joint ankylosed : small healing sinus. Not fit for work.

* See skiagrams here inserted.

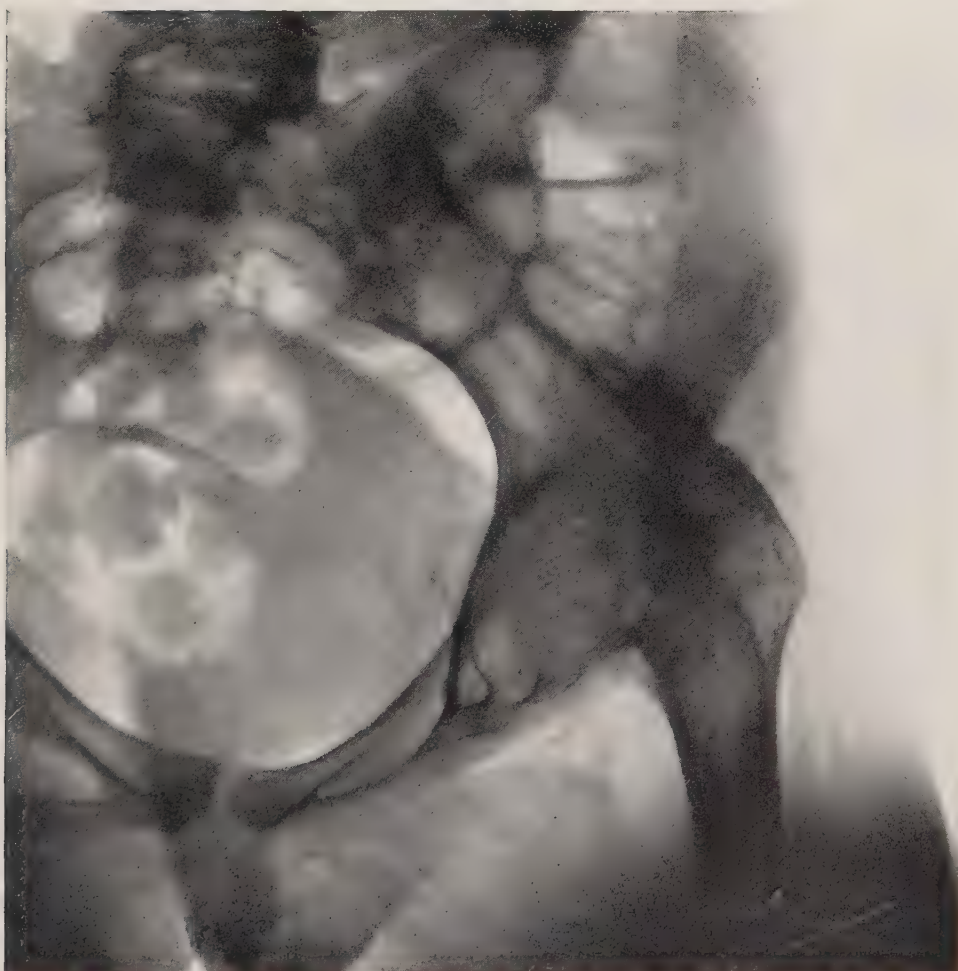
From Table 33 it will be seen that the combined operation of intra- and extra-articular arthrodesis has been done wherever possible. It has been found that the combined procedure does not unnecessarily prolong the time of the operation. It has the advantage of removing all the diseased tissue at the time of the operation and, if for any reason the extra-articular fixation is unsuccessful, there is a possibility of a firm ankylosis following the approximation of the denuded femur and acetabulum.

The graft in every case was taken from the anterior part of the ilium. A large broad piece of the ilium was turned down and wedged into the upper part of the great trochanter. The lower part of the iliac graft before being turned down was not detached from the ilium ; this is important, as the chances of the graft " taking " are considerably increased by adopting this method.

ARTHRODESIS (JOINT FIXATION) IN TUBERCULOSIS OF THE HIP JOINT.



W.2(a).—P.M., female, aged 17. Tuberculosis of left hip joint. Skiagram taken 1-9-33 before operation.



W.2(b).—Same patient. Skiagram taken 22-4-34 after operation shows disappearance of the remains of the articular space, and the graft extending from the ilium to the upper part of the great trochanter. In this case both intra- and extra-articular arthrodesis has been effective.

[Skiagrams taken at Wrightington Hospital.]

ARTHRODESIS IN TUBERCULOSIS OF THE HIP JOINT—*contd.*



W.3(a).—M.F., female, aged 22. Tuberculosis of right hip joint. Skiagram taken 9-12-33 before operation. (Note calcified debris above neck of femur and in region of great trochanter.)



W.3(b).—Same patient. Skiagram taken 7-4-35 after operation shows the graft as a firm boss of bone extending from the ilium to the great trochanter. The original joint space here is not completely obliterated, but firm ankylosis resulted from the extra-articular arthrodesis.

[Skiagrams taken at Wrightington Hospital.]

ARTHRODESIS IN TUBERCULOSIS OF THE HIP JOINT—*contd.*

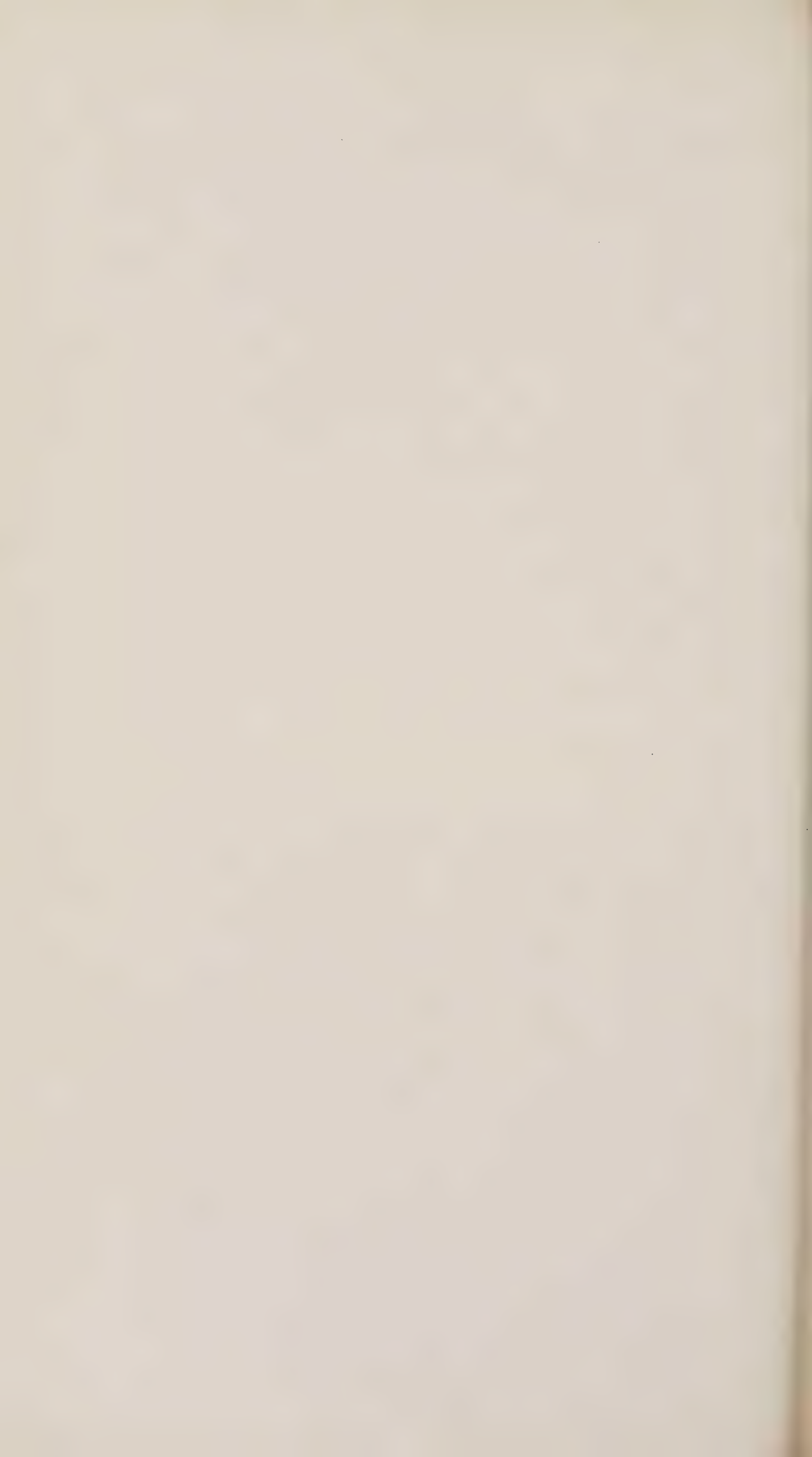


W.4(a).—B.S., female, aged 14. Tuberculosis of left hip joint. Skiagram taken 30-5-33 before operation.



W.4(b).—Same patient. Skiagram taken 18-1-36 after operation shows firm graft extending from the ilium to the upper part of the great trochanter, and disappearance of the joint space with bony trabeculae extending from the head of the femur to the ilium. Intra- and extra-articular fusion.

[Skiagrams taken at Wrightington Hospital.]



Eight of the 11 cases operated on healed by first intention ; in three the wound broke down and of these one ultimately died with multiple sinuses.

Nine cases showed a firm, bony ankylosis in good position as a result of the operation ; in one case the ankylosis was not absolutely firm but the patient was working and suffered no disability ; the case which died also showed a bony ankylosis in spite of severe suppuration.

Five cases are working at their normal occupation, three are fit for work but unemployed, one is doing domestic duties at home, and only one is unfit for work.

Summary.

1. Eleven cases are described in which the operation of arthrodesis of the hip has been performed.

2. In most of the cases the disease was of long standing—average duration over six years.

3. The operation is not justifiable in young children.

4. Both intra- and extra-articular arthrodesis should be done at the same time wherever possible.

5. Firm, bony ankylosis in good position was obtained in ten cases.

I should like to acknowledge my indebtedness to Mr. T. P. McMurray, who performed most of the operations, for his kindly help and criticism.

WIGAN COUNTY DISPENSARY AREA.

Area (estimated population 109,410) embraces Ashton-in-Makerfield, Hindley, Ince-in-Makerfield, and Wigan Rural districts.

Dr. Pask reports :—

The smooth working of the area has again been achieved during 1936 and is, in a large degree, due to the co-operation of the medical practitioners, whom I have to thank for having referred for an opinion before notification 94 per cent. of the new cases (excluding contacts) and also for their helpful co-operation with regard to treatment in many of the “ old ” cases.

The amount of work done during 1936 (new cases for diagnosis 415, screen examinations 426, skiagrams 587, sputa examinations 572) is in excess of the previous year, but I am happy to state that the number of new positive sputum cases has been fewer each year for several years.

We have been able to secure for contact examination 110 persons (57 adults, 53 children) during 1936, with a definite diagnosis of tuberculosis in 8 instances (5 pulmonary, 3 non-pulmonary), or 7 per cent., and in spite of difficulties this valuable work is being zealously continued.

An effort is made to trace a source of infection in each case which comes to our notice, and the result of an investigation of the family history of 127 cases diagnosed as tuberculous in this area during 1936 stresses the importance of contact examination. In 51 of the 127 cases it is recorded that a relative has suffered from tuberculosis (in the same house in 42 instances ; not in the same house, 9) ; in addition, one patient had worked at a bench with a positive sputum case. Thus, of the total number of 127 new cases diagnosed as tuberculous during 1936, a probable source of infection is suggested in 41 per cent.

As in previous years, injection of lipiodol for diagnostic purposes has been performed as an out-patient operation and 15 patients attended on this account. Artificial pneumothorax refill attendances (159) are approximately the same number as during 1935.

The Wigan County District Care Committee has continued to give support to deserving cases and, during 1936, £74 19s. 2d. was expended to assist 50 cases.

Artificial light treatment, both local and general, has been continued at the dispensary throughout the year and full use has been made of the apparatus provided. The cases treated consisted of glandular tuberculosis (with and without softening), abdominal tuberculosis, tuberculosis of bone with sinuses, pulmonary tuberculosis in negative sputum patients, and lupus. It is commonly observed that cases of lupus become spontaneously worse in the winter and improve during the summer when natural radiation is increased ; to prevent this tendency all patients suffering from lupus have been given general light treatment during the winter months in addition to continuing with local injection treatment, the technique of which has been described in previous annual reports. The additional light treatment afforded these patients has necessitated the creation of an extra light session so that irradiation and local treatment can be given at one visit to the dispensary.

As a general rule, injection treatment is now preferred to local light for the treatment of the lupus lesion itself ; a moderately severe reaction to the drug is aimed at, as the ultimate result is better than when no reaction develops. The drug at present in use is eulykol, and

sufficient is injected intradermally to raise a wheal of about 1 cm. diameter. If surface ulceration is present, the raw area is cauterised with acid nitrate of mercury. One case of lupus involving the interior of the nose has been treated in this way and has made rapid improvement, although local irradiation had effected little change in two years.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1936 (Definitely tuberculous, 661 ; doubtful, 11.)										672
					Examinations of <i>new persons</i> and <i>new contacts</i> for diagnosis.	Re-visits or re-attendances of " <i>old</i> " cases and " <i>old</i> " <i>contacts</i> .				
Examinations by tuberculosis officer at—										
Patients' homes	...	...	...	...	95					278
Wigan Dispensary	...	...	...	...	320					1,698
Attendances of patients at the Wigan Dispensary for artificial light treatment (77 individual patients)										2,580
Attendances for artificial pneumothorax treatment (12 individual patients)										159
Attendances for eulykol (hydnocarpates) treatment										142
Care committee meetings attended by—										
(a) Tuberculosis officers	...	...	...	...	...	...	...	...	...	12
(b) Tuberculosis health visitors	...	...	...	...	...	...	...	...	...	22
Visits by tuberculosis officers to sanatoria, and pulmonary and special hospitals										29
Special visits by tuberculosis officers (<i>i.e.</i> , interviews with medical officers of health, general hospital officials, &c.)										1
Visits by dispensary nurses to patients' homes—										
Routine visits	...	...	...	...	...	...	...	...	2,637	} 3,240
Application of surgical dressings	...	...	...	...	...	...	...	...	189	
Adjustment of splints and surgical appliances	...	...	...	...	...	...	...	...	296	
Other actual nursing	...	...	...	...	...	...	...	...	118	
Patients' dispensary attendances for attention by nurses—										
Application of surgical dressings	...	...	...	...	...	...	...	...	...	233
Sanitary defects reported to the local medical officers of health										15
Sanitary defects which after notification were remedied										5
Disinfections carried out by local sanitary authorities										100
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment <i>before</i> statutory notification										94·4%

XXII.—CHADDERTON PULMONARY HOSPITAL,
NEAR OLDHAM.

Visiting Medical Superintendent ... DR. E. T. HOLDEN.

Matron MISS I. FELSTEAD.

An agreement was made on the 1st October, 1919, with the Chadderton, Royton, and Crompton Joint Hospital Board for the use of the buildings at Racefield, erected as a smallpox hospital, for the treatment of patients suffering from pulmonary tuberculosis. Accommodation is provided for 44 female patients. The County Council are under an obligation to vacate the premises in case of an epidemic of smallpox.

The weekly maintenance charge for 1936-37 was £2 1s. 10d. per patient.

The average length of stay of patients at Chadderton during 1936 was as under :—

Patients discharged	...	...	...	...	...	277 days.
Patients who died in the hospital	...	...	...	...	...	293 days.
Observation case discharged	...	...	...	...	...	50 days.

Dr. Holden reports as follows :—

During the year, 34 patients were admitted, 24 discharged and 11 died ; in addition, one case sent in for observation and diagnosis was discharged. The work of the hospital has been carried out on the same lines as in 1935. Every patient admitted was placed on some special form of treatment in addition to the ordinary routine of prolonged rest in bed and symptomatic treatment, unless there was some definite contra-indication such as an obviously hopeless prognosis. There is no doubt that this procedure has been justified by the results. The patients are encouraged to stay for a longer period than they would otherwise, and they develop a more hopeful outlook which has its effect in raising the general morale of the hospital.

The majority of the cases admitted are in an advanced stage of the disease, and, although a very considerable improvement can be made in their general condition by a stay in hospital, there is inevitably a tendency to relapse after they have returned home and are not subject to institutional regime and supervision. This tendency is increased if they take their discharge as soon as they begin to feel better and are allowed up for part of the day, and before they have spent sufficient

time in hospital to consolidate the gain in health. The universal use of special treatments, apart from their specific action on the disease, raises the average length of stay and thus increases the probability of a fairly long period of useful activity after discharge.

The forms of special treatment in use during the year have been artificial pneumothorax, gold salts (sanocrysin), and nordalin. Towards the end of the year an Apneu-Collison inhaler mounted for working with compressed air was also used for inhalation therapy.

Artificial pneumothorax. Eighteen patients were treated by this method during the year. In 7 instances the treatment had to be abandoned as unsatisfactory, and 5 of the successful cases were given gold injections in addition. One patient was treated successfully for severe hæmoptysis by means of a rapid massive collapse.

Gold salts. Sanocrysin was used and given in the same dosage as the previous year to 23 patients. The average amount given during a complete course was 6·5 gm. Treatment had to be abandoned in 5 cases for the following reasons:—Albuminuria, 2; diarrhoea, 2; unsatisfactory general condition, 1. The results, as regards both general improvement and x-ray appearances, have continued to be encouraging.

Nordalin. Fifteen patients received this method of oral treatment during the year. In two instances—both young girls under 18 years of age, who were very advanced cases and unsuitable for any other form of special treatment—the results have been excellent, and I think there is no doubt that the tablets have contributed considerably towards the great improvement in their pulmonary and general condition. Although there has been improvement in the condition of the majority of the other patients to whom nordalin has been given, it is difficult to assess the therapeutic part played by the remedy as they were also advanced cases unsuitable for pneumothorax or sanocrysin, and the improvement which has taken place can equally be attributed to the routine hospital treatment.

The following table shows the amount of special work undertaken at the hospital during the year :—

Artificial pneumothorax—							
Inductions	...	...	...	...	...	...	18
Refills	...	...	...	...	...	...	198
Gas replacements	...	...	...	...	...	...	2
Gold salts—							
Injections of sanocrysin		...	...	...	...	...	485
Mantoux tests	...	...	...	...	...	...	2
X-ray work—							
Screen examinations	...	...	...	...	...	...	323
Skiagrams	...	...	...	...	...	...	117
Sputum examinations (positive, 174 ; negative, 244)							418

The numbers of patients afforded special treatment for the first time in 1936 :—

Artificial pneumothorax—							
Attempted	...	...	...	...	...	...	18
Satisfactory	...	...	...	...	...	...	11
Unsatisfactory	...	...	...	...	...	...	7
Gold salts (sanocrysin)	...	...	...	...	...	...	23
Nordalin	...	...	...	...	...	...	15

The numbers of patients in the hospital on the 31st December, 1936, who were having special treatment were :—

Artificial pneumothorax	...	...	...	...	...	...	5
Artificial pneumothorax and sanocrysin	...	...	...	...	...	...	2
Sanocrysin	...	...	...	...	...	...	8
Nordalin	...	...	...	...	...	...	13

Dental treatment. Systematic dental treatment has again proved of great benefit. Nearly every patient admitted has been found to need attention to the teeth, and this is of special importance if gold injections are contemplated. Details of the treatment given by the dentist, Mr. J. H. Walker, to the patients at Chadderton during 1936 are as follow :—

Number of individual patients treated	...	...	...	...	...	...	46
New dentures provided—complete sets	...	...	...	...	...	...	10
Repairs to dentures	...	...	...	...	...	...	2
Extractions	...	...	...	...	...	...	59
Fillings	...	...	...	...	...	...	4
Other operations	...	...	...	...	...	...	9
Number of inspections	...	...	...	...	...	...	30

Occupational therapy. The condition of the majority of the patients precludes other than the lightest occupational therapy. Those who are allowed up for part of the day are given various domestic tasks such as cleaning brasses and silver, dusting, and washing-up. They are allowed to go for walks if the weather is suitable, the distance varying according to their individual capabilities. Many patients pass a good deal of their time sewing, knitting, and making table mats and covers.

Recreation facilities. The patients' recreation is catered for by the provision of a well-stocked library (646 books being lent out during the year as compared with 343 the previous year, the marked increase being due to the inclement weather during the summer); we have concerts, whist drives, cinematograph shows, bagatelle, ring board, clock golf, and wireless (with headphones for every bed). There is also a company of girl guides.

The annual outing this year was to Southport, and was fortunately favoured by fine weather. Everyone had a most enjoyable time.

It is a custom of the hospital at Christmas for the patients who are well enough to form a concert party for the entertainment of their less fortunate colleagues. The various items and a musical play were very capably performed and revealed a high degree of dramatic talent. A repeat performance was given for the benefit of the patients' visitors and friends, and an appreciative report of the proceedings appeared in the *Oldham Chronicle*.

The spiritual welfare of the patients is looked after by a rota of clergy of the various denominations, and we are very grateful to these gentlemen for their unfailing attentions.

The chief improvement to the hospital surroundings has been the re-laying of the road leading to the institution. For this long-needed repair we have to thank jointly the County Council and the Crompton, Chadderton and Royton Joint Hospital Board.

Our grateful thanks are due to the County Council for their annual grant towards the provision of books for the patients and staff, extra fare at Christmas, and the hire of cinematograph films ; to Dr. Fletcher and various friends for gifts of books and periodicals ; to the concert parties who have entertained us during the year ; and to the *Oldham Chronicle* for their courtesy in publishing reports of social events and a photograph of the occasion when the Cotton Queen of Oldham kindly visited the hospital.

In conclusion it is a pleasure to acknowledge the always willing and helpful co-operation of my colleagues of Dispensary Area No. 3, and to thank the matron, Miss Felstead, Sister Goodall and the staff of the hospital for their loyal support during the year.

XXIII.—HEATH CHARNOCK PULMONARY HOSPITAL, NEAR CHORLEY.

Visiting Medical Superintendent ... DR. J. RIGBY.
(Dr. Rigby is also medical officer to the Chorley Joint Hospital Board).

Matron MISS H. SINCLAIR.

In 1914, by agreement with the Chorley Joint Hospital Board, the County Council leased $1\frac{1}{2}$ acres of land adjoining the Board's isolation hospital on which they erected, equipped, and furnished two pavilions, dining hall, and additional accommodation for the staff.

The Joint Board are, by agreement, responsible for the maintenance, nursing, and treatment of the patients, the County Council paying to them the cost thereof.

Accommodation is provided for 39 patients—17 men and 14 women in the two pavilions, and 8 men in wooden sleeping shelters. In March, 1937, the male patients were replaced by females, leaving the hospital for one sex only.

The weekly maintenance cost for 1936–37 was £2 5s. 11d. per patient.

The average length of stay of patients at Heath Charnock during 1936 was :—

Patients discharged	...	...	...	...	...	185 days.
Patients who died in the hospital	...	...	...	...	...	348 days.
Observation case discharged	...	...	...	...	...	61 days.

Dr. Rigby reports as follows :—

The cases admitted during the year numbered 60 ; 43 were discharged, 21 of these having made improvement ; and 19 patients died. In addition, one case admitted for observation and diagnosis was discharged as non-tuberculous.

The patients admitted seem to have contained a greater proportion of advanced cases than in the previous year, with the consequent increase in the number of bedfast patients. It has been a trying time, calling for extra work from the nurses, but the resources of the matron and the willingness of the staff have enabled the hospital to run smoothly and the patients to be contented during their enforced rest.

Three patients were selected for gold treatment, and a course was given in each case which resulted in temporary improvement.

Four patients were transferred to sanatoria for surgical treatment.

The specimens of sputum examined numbered 164, 117 being positive.

The x-ray examinations during 1936 have been carried out at the Chorley Dispensary, but with the provision of an x-ray plant early in 1937 we shall be able to carry out our own examinations.

It has been found possible, with the extension of the administrative block of the adjoining infectious hospital, to provide accommodation for the staff in the spacious rooms of the new building. The staff, being away from the wards, derive more pleasure and benefit during their off-duty time.

A re-organisation of the nurses' former quarters has taken place ; the serving kitchen adjoining the dining-room has been enlarged, and a " sunshine parlour " constructed as a rest room for the female patients. The remaining part of the block has been transformed into a treatment theatre and an x-ray room.

All the headphones in the cubicles have been renewed after many years of good service.

The annual garden party was the usual happy and financial success and enabled the patients to organise their annual outings. This year they elected to go to Harrogate and later to the illuminations at Blackpool.

Once again we were favoured by the visits of concert parties from Bolton and Chorley.

Christmas-time was made as pleasant as possible for the many advanced cases we had in at that time. After the Christmas dinner, an entertainment and a " party " took place at which the Chairman of the Joint Hospital Board, Alderman J. Sharples, distributed the gifts from the tree, a duty he has performed each year during his seven years' Chairmanship of the Board.

XXIV.—COST OF THE TUBERCULOSIS SCHEME.

The report so far has dealt entirely with measures for the prevention and treatment of tuberculosis, and with vital statistics, but it is also desirable that the cost of the scheme should be recorded.

The following statement shows the expenditure under the principal headings incurred by the Lancashire County Council on the operation of their tuberculosis scheme:—

	1935-36 £	1936-37 £
1. Maintenance of 24 dispensaries (including artificial light departments, x-ray plants, salaries of staff, provision of special nourishment) and home supervision of patients, average 7,403	46,071	45,969
2. Accommodation at sanatoria and hospitals provided, leased, or rented by the County Council for the treatment of patients suffering from tuberculosis (average number of beds occupied:—1935-6, 969 ; 1936-7, 967)	138,892	141,734
3. Patients' travelling expenses (proceeding to and from institutions, and for special treatment at dispensaries)	2,979	3,004
4. Administration expenses (including salary of Central Tuberculosis Officer and staff, travelling expenses, printing, stationery, proportion of cost of County Architect's, Clerk of Council's and County Treasurer's departments) and research	13,562	13,596
Total gross expenditure	£201,504	£204,303
Less income from beds rented to other authorities, Ministry of Pensions in respect of tuberculous ex-service men, sale of produce, rents from land, <i>etc.</i>	7,622	9,228
Total net expenditure	£193,882	£195,075
Equivalent rate in the £	4.88d.	4.75d.

It should be remembered that tuberculosis is one of the services aided by the General Exchequer Contribution which succeeded the 50 per cent. grant discontinued by the Local Government Act of 1929. It is not possible to state what proportion of the General Exchequer Contribution is in respect of tuberculosis expenditure.

The weekly maintenance charges for patients at the several sanatoria and hospitals of the Lancashire County Council are included in the report for the particular institution.

XXV.—CARE WORK.

WHAT IS CARE WORK?

A definition of care work is not easy to give, but a comprehensive one might be:—All that part of the anti-tuberculosis scheme which does not directly deal with diagnosis and special treatment in hospital, sanatorium or dispensary. More particularly it may be described as the efforts directed to attain or maintain the patient's social welfare, so that he and his household may be in the best environment to take advantage of medical knowledge concerning tuberculosis. Assuming the above definition is reasonable, it is clear that care work is not only very comprehensive but consists of many factors, even, for example, measures taken to prevent spread of the disease in patients' homes.

In the country generally, the dividing line between care work under the official scheme and care work done by voluntary committees varies considerably. In Lancashire, however, since the inception of the scheme and with subsequent expansion, a considerable proportion of items of a care nature are done under the official scheme. The following statement shows readily where the division takes place in Lancashire:—

(a) *Items of Care Work done for patients in the whole Administrative County under the OFFICIAL SCHEME (with approximate costs for 1936):*

1. Provision of special nourishment (milk) *on medical grounds* (£2,900).
2. Thermometers, paper handkerchiefs, and sputum cups (£950).
3. Appliances, *e.g.*, splints, crutches, supports, surgical boots (£686).
4. Dressings, if patients are suffering from "open" surgical tuberculosis.
5. The loan of bedsteads and mattresses, and nursing requisites (£50 for replacements).
6. Payment of railway fares to and from institutions, and cost of removal of patients by ambulances or taxis (£3,350).
7. Training and re-settlement in a tuberculosis colony (£1,100).
8. Dental attention (dispensary patients £240; institutional patients £385).
9. Wooden sleeping shelters (£75 for repairs and removals).
10. Public lectures—propaganda—(£65).

(b) *Items of Care Work, additional to (a) above, done in the whole Administrative County either by the voluntary CARE committees or through the dispensary CARE organisation:*

11. Provision of milk, meat, and groceries *on economic grounds* for patients or family.
12. Provision of clothing and footwear.
13. Occasional payment of rent.
14. The committees occasionally purchase blankets, invalid carriages, and nursing requisites, articles which could be paid for out of the tuberculosis funds.

OUTLINE OF THE LANCASHIRE CARE SCHEME.

The statutory power for undertaking care work is contained in the Public Health (Tuberculosis) Act of 1921 which states (Sec. 2) : "The council of a county or county borough shall have power to make such arrangements as they think desirable for the after-care of persons who have suffered from tuberculosis."

The extended care scheme adopted by the County Council in August, 1924, and amended in November, 1936, is carried out in accordance with the following policy :—

(a) For the portions of the County where the 17 voluntary care committees (covering a population of 783,332) already function, the work is done by these committees, and annual grants are made to them by the County Council of 50 per cent. of their expenditure on assistance to patients provided no donation is invited or received from another local authority or other committee of the County Council.

(b) For the remainder of the County, where no voluntary care committees have been established (at present comprising a population of 1,059,568), the work is done through the dispensary organisation under the direction of the Central Tuberculosis Officer, based on instruction from the County Tuberculosis Committee.

(c) Encouragement and assistance, as heretofore, will be given to the formation of new voluntary care committees, and from time to time as committees are approved they will assume responsibility for the care work in their particular districts in succession to the dispensary organisation.

Before 1924, no money from the tuberculosis funds of the County Council was available for care work in the areas where there were no voluntary care committees.

The principle underlying the method of allocating grants for care work is that proportionately the same amount of money from the tuberculosis funds is available for the whole County whether covered by voluntary care committees or not. This ensures, also, that the voluntary committees have the benefit of all moneys collected by them from other sources. The matter may be pictured more clearly by taking two towns, say, "A" with a care committee who spend £100 per annum (£50 raised locally and £50 granted from the County Council), against "B," without a care committee, for whose patients £50 is granted from the County Council.

Enquiry is often made as to the difference in benefit which a patient would receive if dealt with by a voluntary care committee as against the dispensary organisation : do the patients in town "B" suffer through the lack of voluntary funds ? The following statement has been prepared to answer the question :—

Voluntary care committee.

Through having larger funds care committees can be more generous.

There is reluctance to refer cases to Public Assistance Committee or Unemployment Assistance Board unless they are likely to require substantial grants.

There is no restriction on the amount of help which care committees can give—it depends entirely on their resources.

Dispensary organisation.

The tuberculosis officers work to a family income scale.

The tuberculosis officers, to conserve their relatively small funds, refer cases more quickly to the Public Assistance Committee or Unemployment Assistance Board.

Where patients are already in receipt of relief, the tuberculosis officer recommends the Public Assistance Committee or Unemployment Assistance Board to make a grant for extra food.

The care committees enjoy almost complete autonomy. No stipulation has been imposed as to the collection of funds; in fact, the only condition of recognition of a voluntary committee is that they shall appoint the consultant tuberculosis officer of the area as medical adviser and shall issue an annual report and balance sheet.

The annual reports and balance sheets of the various committees are considered by the County Tuberculosis Committee, who have expressed their appreciation of the helpful voluntary work carried out.

The following is a list of the existing voluntary care committees, the populations served, the number of patients assisted, and the amounts expended on assistance during 1936 :—

TABLE 34.—*Work done by voluntary care committees.*

Name of committee.	Estimated population served 1936.	Number of individual patients assisted during 1936.	Expenditure on patients during 1936.		
			£	s.	d.
Ashton-under-Lyne and District...	68,655	48	120	7	1
Chorley and District ...	72,235	59	458	8	3
Earlestown, Newton and District ...	22,836	14	19	18	10
* Egerton, Eagley, Dunscar and District...	5,623	—	—	—	—
Farnworth and District ...	68,098	31	67	16	1
Golborne ...	14,000	9	25	16	11
Horwich ...	15,080	20	148	9	3
Huyton-with-Roby District ...	18,300	10	23	18	0
Lancaster and District ...	95,203	21	130	8	10
Leigh and District...	84,820	117	147	12	10
Prescot and District ...	22,862	11	84	13	4
Prestwich ...	30,500	3	15	9	0
† Radcliffe, Whitefield and District Relief Fund for Consumptives ...	38,410	26	120	15	4
Stretford Civic Guild of Help ...	59,500	64	81	3	10
Westhoughton ...	15,420	10	27	6	7
Widnes ...	42,380	56	81	10	10
Wigan County District ...	109,410	50	74	19	2
TOTAL ...	783,332	549	£1,628	14	2

* Ceased to operate as a voluntary care committee June, 1937.

† Relates to year ended 31st March, 1937.

In addition to the grant-in-aid of 50 per cent. from the County Tuberculosis Committee, the cost of all stationery, printing, advertising, postages, and of clerical assistance is borne entirely by the Tuberculosis Committee. This also applies, of course, to the care work done by the dispensary organisation.

For most of the care committees, the tuberculosis health visitor or the dispensary clerk is the hon. secretary or assistant hon. secretary ; the consultant tuberculosis officer is the medical adviser.

The accounts of the care committees are subject only to audit by each care committee's own appointed auditor. On the other hand, the accounts of the dispensary organisation are subject to audit by the County Auditor and the Government District Auditor.

OBJECTS OF VOLUNTARY CARE COMMITTEES.

The following are in general the objects for which the voluntary care committee may be said to stand :—

- (1) To assist in the purchase of clothing which patients need when they go to a sanatorium or hospital.
- (2) To provide food and clothes for poor patients who are receiving treatment at home.
- (3) To give assistance (in kind) to dependants, so as to enable patients, for whom institutional treatment has been recommended, to take advantage of the opportunities provided under the County scheme.
- (4) To assist patients, who are sufficiently recovered, to obtain suitable employment.
- (5) To give suitable advice and encouragement to patients and their friends, and generally to assist the dispensary staff in the enlightenment of the public both as to the laws of health and the facilities for treatment.

OBJECTS OF COUNTY CARE FUND.

In the areas without care committees the County Council have charged the tuberculosis dispensary staff with the duty of carrying out the relief work. Grants to necessitous patients or their dependants are made on the recommendation of the consultant tuberculosis officers, with the following general objects :—

- (a) To assist in the purchase of clothing which patients need when they go to a sanatorium or hospital.
- (b) To provide food and clothes for necessitous patients who are receiving treatment at home, and for those who have returned from an institution with no chance of resuming work.
- (c) To give assistance (in kind) to dependants, so as to enable patients, for whom institutional treatment has been recommended to take advantage of the opportunities provided under the County scheme.

CO-OPERATION WITH OTHER BODIES.

With the transfer of the Poor Law functions to the County Council, arrangements have been made to continue co-operation with the Public Assistance Committee and their Guardians Committees so as to prevent overlapping in rendering assistance in necessitous or destitute cases; liaison has also been established with the Unemployment Assistance Board.

COUNTY CARE FUND.

The following Table 35 shows the position of the remainder of the dispensary areas not covered by voluntary care committees and the amount of the grants made by the County Tuberculosis Committee :—

Dispensary Area.			Estimated population 1936.	Total population covered by care committees, 1936.	Balance of population to come under dispensary organisation 1936.	Amount of grant available for area not covered by care committees calculated on population.
						£
No. 1	...	...	252,621	182,518	70,103	60
No. 2	...	...	327,593	5,623	321,970	282
No. 3	...	...	375,047	137,565	237,482	204
No. 4	...	...	366,838	241,838	125,000	107
No. 5	...	...	285,199	106,378	178,821	149
Furness	...	...	38,022	—	38,022	33
Fylde	...	...	88,170	—	88,170	76
Wigan County	...	...	109,410	109,410	—	—
Total	...	...	1,842,900	783,332	1,059,568	£911

Any grant made by the tuberculosis officer to a tuberculous patient is reported to the local Guardians Committee of the Public Assistance Committee if the patient or family are already receiving relief from the Public Assistance Committee.

During 1936, assistance (mainly in the provision of milk, groceries, and clothing) was afforded through the dispensary staff to 263 individual patients, the amount expended being £659 8s. 2d.

VISITS BY VOLUNTARY CARE COMMITTEES.

The following visits of voluntary care committees to County sanatoria and hospitals have taken place :—

Horwich Care Committee ... Withnell Pulmonary Hospital 6th June, 1936.

The County Tuberculosis Committee encourage these visits as they enable the members of the care committees to see at first hand the institutional side of the scheme.

HANDICRAFTS.

At the Wrightington Hospital children and adults are trained in handicrafts by the teachers and the instructresses. When the adult patients return to their homes, it is known that a number of them continue the work they have learnt and are able to sell the articles they have made. The medical superintendent of the Wrightington Hospital reports that ex-patients are known to be benefiting by the handicrafts taught at the hospital. The following are the subjects in which instruction is given: Women—making of artificial flowers and jewellery, needlework, embroidery, hand-painted glass, decorated earthenware jugs, knitted toys, and leather work; men—french polishing, stool seating, poker work, leather work, jewellery, and making door mats. Thus, the handwork which the patients learnt at Wrightington is definitely worth while, both from the point of view of occupying them during their treatment and also as a means of supplementing their income after discharge.

XXVI.—DENTAL TREATMENT.

Patients eligible for dental treatment are those who, in the opinion of the medical superintendent or the tuberculosis officer, are unable to derive full benefit from their treatment for tuberculosis owing to defective teeth. Patients already covered by dental schemes of other bodies, *e.g.*, school children at home and tuberculous pensioners, are excluded from benefit. For insured persons who are tuberculous many approved societies make a contribution towards the cost of dental attention required.

At the following County sanatoria and hospital the dental work is carried out by a visiting dentist:—High Carley, Oubas House, Elswick, and Wrightington. At the other County institutions, *e.g.*, Chadderton, Heath Charnock, Lancaster, Peel Hall, Withnell, and Wolstenholme Pulmonary Hospitals, a local dentist is called upon to visit as and when required.

The statement below shows the dental work carried out during 1936, under the scheme approved by the County Council:—

TABLE 36.

Institution.	Number of individual patients who received dental attention.	New dentures provided.		Repairs to dentures.	Extractions.	Fillings.	Scalings and cleanings.	Other operations.	Inspections.
		Complete sets.	Partial sets.						
High Carley ...	164	15	7	10	262	31	1,282	116	136
Oubas House (Children)	8	—	—	—	5	3	—	—	4
Elswick ...	155	6	6	3	127	19	48	44	150
Wrightington ...	148	30	5	4	813	29	382	70	395
Other sanatoria and hospitals ...	144	23	5	14	351	8	1	11	64
Dispensary patients	31	19	10	3	294	1	10	—	—
TOTAL ...	650	93	33	34	1,852	91	1,723	241	749

The dental scheme, considering the benefit derived by the patients, has proved economical, and continues to be justified.

XXVII.—INSTITUTIONAL ACCOMMODATION.

On the 31st December, 1936, there were 944 beds at sanatoria and hospitals occupied by County patients, as compared with 914 at the end of 1935. The number of beds occupied by pulmonary cases worked out at 81 per 100 pulmonary deaths; for non-pulmonary tuberculosis the proportion was 130 beds per 100 non-pulmonary deaths.

Table 37 below gives a summary of the beds occupied at the end of 1936 at the several types of institutions, the names of which are contained in Appendix XI :—

Type of institution.	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.
	Adults.	Children.	Adults.	Children.	
Institutions for pulmonary tuberculosis	607	35	2	8	652
Training colonies	10	—	5	—	15
Institution with accommodation for combined tuberculosis	20	4	—	—	24
Beds occupied by observation cases	10	7	1	3	21
Institutions for non-pulmonary tuberculosis ...	1	—	92	139	232
Total	648	46	100	150	944
	694		250		

The number of beds occupied fluctuates during the course of the year, there being a greater demand for beds in the summer than in the winter. In July, 1936, the beds occupied totalled 976, and in July, 1937, 988.

The number of beds in occupation by County patients on the 31st December of each year was as follows :—1926, 825; 1927, 819; 1928, 858; 1929, 874; 1930, 906; 1931, 875; 1932, 931; 1933, 875; 1934, 911. 1935, 914; and 1936, 944.

Of the 944 beds occupied, 686 were in sanatoria or hospitals belonging to the County Council, and 258 were in non-County institutions.

Of the 694 beds occupied by pulmonary patients, 82 per cent. of the cases were classified as “T.B. plus,” that is, sometime during treatment their sputum was positive.

The list of patients waiting for institutional treatment averaged at monthly periods during 1936, was as follows :—Sanatoria, adults 11; pulmonary hospitals, adults 12; special hospitals, adults 7, children 9; general hospitals, adults 3, children 2.

A return was obtained from the medical superintendents of Public Assistance hospitals of the number of patients suffering from tuberculosis chargeable to the Lancashire County Council who were in such hospitals on the 31st December, 1936. The following statement has been prepared from the returns so furnished :—

TABLE 38.

	Patients in Public Assistance hospitals on 31st December, 1936.			
	Adult males.	Adult females.	Children.	Total.
Pulmonary tuberculosis	15	7	—	22
Non-pulmonary tuberculosis ...	5	6	2	13
				35

The foregoing total of 35 cases (compared with 57 at end of 1935) in Public Assistance hospitals contains those tuberculous patients whose mental condition, or other complication, does not permit of their being treated in sanatoria and hospitals. Every effort is made to transfer as soon as possible patients who require special treatment for tuberculosis to the sanatoria and hospitals provided for such treatment.

Further particulars of the residential treatment for tuberculous patients in Public Assistance hospitals are given in Appendix VII.

XXVIII.—TREATMENT, OCCUPATIONAL TRAINING, AND VILLAGE SETTLEMENTS.

A complete tuberculosis scheme has facilities for sending carefully selected patients to village settlements where they can undergo a probationary period of treatment combined with training to fit them to live with their families in cottages forming part of the village settlement, or, if single, to enter the hostel in such settlement. The main factors to be considered when making the selection are: the inadvisability of the patient returning to his normal occupation, the unsuitability of the home circumstances of the patient, temperamental suitability, the medical condition, age of the patient, and the likelihood of the patient and family to become successful settlers.

So far, the principal village settlements established in England are: Papworth Village Settlement, Cambridge (Medical Director, Sir Pendrill Varrier-Jones); British Legion Village, Preston Hall, Aylesford, Kent (Medical Director, Dr. J. B. McDougall); Barrowmore Tuberculosis Sanatorium and Settlement, Great Barrow, Chester (established and administered by the Order of St. John and the British Red Cross Society—Medical Director, Dr. E. L. Sandiland).

Arrangements exist for County patients to be sent to each of these settlements upon agreed terms, and the following statement shows the number entering the settlements and the number who still remain:—

TABLE 39.

Name of settlement.	Number of patients who entered the settlement to 31-12-36.	Number of patients who left the settlement.	Number of patients who died in the settlement.	Number of patients in the settlement on 31-12-36.
Papworth Village Settlement ...	2	—	2	—
British Legion Village	4	1	1	2
Barrowmore Tuberculosis Sanatorium and Settlement	22	6	5	11

A village settlement with its associated workshops, seeking orders in the open market at competitive rates, makes this aspect of a settlement similar to a large business with consequent commercial risks. It is generally agreed that local authorities, owing to methods of public finance, to mention but one factor, are unable themselves to manage village settlements, hence co-operation with settlements under the control of voluntary bodies is advisable.

On the 1st July, 1936, revised arrangements with the Committee of the Barrowmore Tuberculosis Sanatorium and Settlement were adopted concerning the admission of County patients to the sanatorium, industries, and settlement.

The arrangements embrace the following conditions :—

SANATORIUM SECTION.—The maintenance charge to accord with the annual return to the Ministry of Health.

INDUSTRIES.—Patients and potential settlers of commercial value in the industries to be charged for at a lower maintenance rate.

SETTLEMENT.—Payment at a flat rate (£1 per week for married men and 10s. per week for unmarried men) for a period of five years, with the proviso that any patient relapsing and re-entering the sanatorium section should be paid for at the maintenance rate applicable to sanatorium patients. The return to the normal population of patients who have recovered from tuberculosis, including the possibility of a rehabilitation grant by the County Council to any recovered patient leaving the settlement.

Although settlement facilities are important in a tuberculosis scheme, the proportion of patients dealt with is very small. At the most it can be said that the proportion of sanatorium patients suitable for settlement will not exceed 5 per cent.

Experience shows that many patients show a disinclination to leave the locality in which their homes are situated to enter with their families a village settlement many miles away.

In addition to patients who receive training in a workshop preparatory to entering a settlement and to those who receive treatment and undertake work as occupational therapy, arrangements exist for suitable patients, both pulmonary and non-pulmonary, to receive training in a definite occupation in order to fit them to return to useful employment. Patients sent for such training combined with treatment are youths who have had little or no employment and who require occupational training under sanatorium conditions. The following statement shows the patients who have been afforded training combined with treatment :—

TABLE 40.

Name of institution.	Number of patients admitted to 31-12-36.	Patients discharged.		Number of patients undergoing training on 31-12-36.
		Training completed.	Training terminated before completion of course.	
Burrow Hill Sanatorium Colony ...	9	3	4	2
Derwen Cripples' College	10	3	4	3
St. Vincent's Orthopædic Hospital	2	1	1	—

Here again every care has to be taken in selecting patients to undergo training, as much public money can be expended in attempting to train persons who prove to be unsuitable.

XXIX.—HOME TREATMENT AND DISPENSARY TREATMENT OR SUPERVISION.

All notified cases of tuberculosis while at home are under the supervision of the tuberculosis officers and tuberculosis health visitors, in addition to the treatment that may be obtained from their medical attendants. Ordinary medical treatment at dispensaries (as distinct from special treatment such as artificial light and artificial pneumothorax) has never been undertaken, unless the patient has no doctor or requires some special form of treatment. The number of consultations with medical practitioners in 1936 was as follows :—Personal, 606 ; otherwise, 6,435 ; total, 7,041.

APPENDIX I.

DEATH-RATES for 1936 from tuberculosis in 110 urban and rural districts in Lancashire, and in the 8 County dispensary areas.

Sanitary district.	Estimated population, 1936.	Pulmonary tuberculosis.			Non-pulmonary tuberculosis.	
		Number of deaths, 1936.	Death-rate per 1,000 of population, 1936.	Average death-rate 5 years, 1931-35.	Number of deaths, 1936.	Death-rate per 1,000 of population, 1936.
URBAN						
Abram	6,443	6	0·93	0·44	—	—
Accrington (B)... ..	40,420	15	0·37	0·48	9	0·22
Adlington	4,087	3	0·73	0·56	—	—
Ashton-in-Makerfield	19,820	11	0·55	0·38	4	0·20
Ashton-under-Lyne (B)	49,580	30	0·60	0·62	6	0·12
Aspull	6,748	3	0·44	0·57	—	—
Atherton	20,430	6	0·29	0·41	1	0·04
Audenshaw	11,060	10	0·90	0·47	1	0·09
Bacup (B)	19,890	8	0·40	0·57	1	0·05
Barrowford	5,002	—	—	0·30	1	0·19
Billinge and Winstanley	5,451	2	0·36	0·61	1	0·18
Blackrod	3,336	1	0·29	0·38	—	—
Brierfield	7,391	2	0·27	0·57	2	0·27
Carnforth	3,148	1	0·31	0·42	1	0·31
Chadderton	28,160	12	0·42	0·54	2	0·07
Chorley (B)	29,750	11	0·36	0·40	4	0·13
Church	5,723	2	0·34	0·53	—	—
Clayton-le-Moors	7,349	2	0·27	0·30	—	—
Clitheroe (B)	11,440	3	0·26	0·48	—	—
Colne (B)	22,620	15	0·66	0·68	4	0·17
Crompton	13,780	7	0·50	0·53	2	0·14
Dalton-in-Furness	10,270	4	0·38	0·79	—	—
Darwen (B)	33,060	12	0·36	0·36	4	0·12
Denton	19,670	12	0·61	0·51	4	0·20
Droylsden	19,250	17	0·88	0·64	—	—
Eccles (B)	42,770	24	0·56	0·53	3	0·07
FaiIsworth	16,990	6	0·35	0·76	2	0·11
Farnworth	28,110	16	0·56	0·41	4	0·14
Fleetwood (B)	24,000	12	0·50	0·62	2	0·08
Formby... ..	8,575	8	0·93	0·57	1	0·11
Fulwood	10,230	1	0·09	0·15	1	0·09
Golborne	14,000	5	0·35	0·61	1	0·07
Grange-over-Sands	2,371	—	—	0·77	—	—
Great Crosby	24,570	11	0·44	0·40	2	0·08
Great Harwood	11,480	2	0·17	0·41	1	0·08
Haslingden (B)	15,740	11	0·69	0·43	1	0·06
Haydock	10,750	4	0·37	0·55	—	—
Heywood (B)	25,660	13	0·50	0·70	1	0·03
Hindley... ..	20,660	9	0·43	0·74	4	0·19
Horwich	15,080	5	0·33	0·34	1	0·06
Huyton-with-Roby	18,300	6	0·32	0·53	5	0·27
Ince-in-Makerfield	21,410	7	0·32	0·80	2	0·09
Irlam	14,400	12	0·83	0·59	—	—
Kearsley	10,920	3	0·27	0·41	1	0·09
Kirkham	4,211	1	0·23	0·53	—	—
Lancaster (B)	47,090	21	0·44	0·52	4	0·08
Lees	4,353	2	0·45	0·47	—	—
Leigh (B)	45,540	22	0·48	0·48	6	0·13
Leyland	11,510	6	0·52	0·38	2	0·17
Litherland	18,150	17	0·93	1·04	2	0·11
Littleborough	11,470	5	0·43	0·28	—	—
Little Lever	4,868	2	0·41	0·60	2	0·41
Longridge	4,043	3	0·74	0·62	1	0·24
Lytham St. Annes (B)	25,300	10	0·39	0·37	2	0·07
Middleton (B)	29,110	17	0·58	0·54	4	0·13
Milnrow	8,287	1	0·12	0·32	—	—
Morecambe and Heysham (B)	28,770	13	0·45	0·47	3	0·10
Mossley (B)	11,290	2	0·17	0·53	3	0·26
Nelson (B)	36,500	11	0·30	0·50	2	0·05
Newton-in-Makerfield	20,580	16	0·77	0·64	4	0·19

APPENDIX I (contd.).

Sanitary district.	Estimated population, 1936.	Pulmonary tuberculosis.			Non-pulmonary tuberculosis.	
		Number of deaths, 1936.	Death-rate per 1,000 of population, 1936.	Average death-rate 5 years, 1931-35.	Number of deaths, 1936.	Death-rate per 1,000 of population, 1936.
URBAN (contd.)						
Ormskirk	18,090	6	0.33	0.51	2	0.11
Orrell	7,980	6	0.75	0.41	2	0.25
Oswaldtwistle	13,070	7	0.53	0.51	—	—
Padiham	10,890	10	0.91	0.57	2	0.18
Poulton-le-Fylde	5,966	1	0.16	0.26	1	0.16
Preesall	2,037	1	0.49	0.19	—	—
Prescot	11,220	5	0.44	0.48	3	0.26
Prestwich	30,500	12	0.39	0.54	—	—
Radcliffe (B)	26,860	9	0.33	0.59	3	0.11
Rainford	3,563	—	—	0.55	—	—
Ramsbottom	15,190	7	0.46	0.63	3	0.19
Rawtenstall (B)	27,710	14	0.50	0.47	3	0.10
Rishton	6,037	2	0.33	0.73	—	—
Royton	15,950	7	0.43	0.64	2	0.12
Skelmersdale	6,091	4	0.65	0.42	—	—
Standish-with-Langtree	7,964	3	0.37	0.37	1	0.12
Stretford (B)	59,500	28	0.47	0.60	8	0.13
Swinton and Pendlebury (B)...	38,980	17	0.43	0.51	3	0.07
Thornton Cleveleys	12,200	6	0.49	0.81	—	—
Tottington	6,132	5	0.81	0.27	—	—
Trawden	2,391	1	0.41	0.47	2	0.83
Turton	11,390	5	0.43	0.49	1	0.08
Tyldesley	18,850	13	0.68	0.56	3	0.15
Ulverston	9,241	—	—	0.45	2	0.21
Upholland	6,064	3	0.49	0.44	1	0.16
Urmston	28,850	8	0.27	0.38	2	0.06
Walton-le-Dale	13,270	13	0.97	0.44	4	0.30
Wardle	4,331	2	0.46	0.35	1	0.23
Waterloo-with-Seaforth	30,980	32	1.03	0.87	5	0.16
Westhoughton	15,420	5	0.32	0.43	—	—
Whitefield	11,550	8	0.69	0.41	2	0.17
Whitworth	7,859	3	0.38	0.70	—	—
Widnes (B)	42,380	21	0.49	0.81	6	0.14
Withnell	2,828	2	0.70	0.61	1	0.35
Worsley	24,200	8	0.33	0.44	—	—
Total Urban	1,606,500	773	0.48	0.54	177	0.11
RURAL						
Blackburn	12,570	4	0.31	0.27	—	—
Burnley... ..	17,880	11	0.61	0.49	1	0.05
Chorley	24,060	10	0.41	0.31	—	—
Clitheroe	9,040	2	0.22	0.22	—	—
Fylde	9,500	6	0.63	0.45	1	0.10
Garstang	11,800	1	0.08	0.25	—	—
Lancaster	9,770	7	0.71	0.49	1	0.10
Limehurst	8,015	3	0.37	0.56	1	0.12
Lunesdale	6,425	2	0.31	0.18	—	—
Preston	32,380	11	0.33	0.32	4	0.12
Ulverston	16,140	6	0.37	0.32	2	0.12
Warrington	18,100	3	0.16	0.34	—	—
West Lancashire	30,570	8	0.26	0.35	3	0.09
Whiston	23,280	6	0.25	0.34	2	0.08
Wigan	6,870	3	0.43	0.59	—	—
Total Rural	236,400	83	0.35	0.36	15	0.06
Total for Administrative County	1,842,900	856	0.46	0.51	192	0.10
DISPENSARY AREAS						
No. 1	252,621	111	0.43	0.40	27	0.10
No. 2	327,593	139	0.42	0.48	34	0.10
No. 3	375,047	190	0.50	0.56	37	0.09
No. 4	366,838	169	0.46	0.50	34	0.09
No. 5	285,199	147	0.51	0.60	35	0.12
Furness	38,022	10	0.26	0.50	4	0.10
Fylde	88,170	37	0.44	0.50	6	0.07
Wigan County	109,410	53	0.48	0.58	15	0.13

TABLE B.

ADMINISTRATIVE COUNTY OF LANCASTER.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

SUMMARY OF NOTIFICATIONS OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS DURING THE FIFTY-TWO WEEKS ENDED 26TH DECEMBER, 1936*.

(Extracted from Weekly Returns of District Medical Officers of Health.)

NOTIFICATIONS ON SCHEDULE A—Excluding Duplicates.																																												
PULMONARY.											NON-PULMONARY.																																	
	Lungs only.	Lungs and Larynx.	Larynx.	Bronchial Glands.	Mediastinal Glands.	TOTAL.	Head (including Middle Ear).	Trunk.			BONES AND JOINTS.										ABDOMINAL.				GENITO-URINARY.							MILIARY (Generalised).	SKIN (Lupus).	PERIPHERAL GLANDS.			MISCELLANEOUS.	TOTAL.	Total Pulmonary and Non-Pulmonary.	Total Notifications (i.e., including cases previously notified by other Doctors).				
								Ribs and Sternum.	Spine.	Shoulder.	Scapula.	Humerus.	Elbow.	Radius.	Ulna.	Hand and Wrist.	Hip and Pelvis.	Femur.	Knee.	Tibia.	Fibula.	Foot and Ankle.	Two or more different Joints.	Not Classified.	Intestines.	Peritoneum.	Mesenteric Glands.	Bladder.	Sal. Tube.	Kidney.	Prostate.			Suprarenal.	Testicle and Epididymis.	Not Classified (two or more).					MENINGITIS (Brain).	Axillary.	Cervical.	Inguinal.
Thirteen weeks ended 28th March, 1936 ...	295	6	2	303	15	1	1	1	9	1	9	2	8	12	2	4	...	1	3	2	10	...	9	1	89	...	5	185	488	557	
Thirteen weeks ended 27th June, 1936 ...	325	2	2	...	1	330	...	3	10	1	1	2	12	1	7	1	...	5	2	1	2	19	6	1	4	1	13	2	12	1	105	...	3	215	545	620
Thirteen weeks ended 26th September, 1936...	317	1	318	...	3	8	2	1	2	6	...	3	2	...	2	4	12	2	5	7	2	9	...	3	1	72	2	5	153	471	522
Thirteen weeks ended 26th December, 1936...	293	1	2	...	1	297	...	1	10	2	1	11	...	2	1	1	2	1	18	2	...	1	3	5	3	9	...	7	...	73	...	16	169	466	531
Total ...	1230	10	6	...	2	*1248	...	7	43	5	...	1	3	...	1	5	38	2	21	2	...	7	3	7	15	61	12	...	1	13	...	1	19	8	41	2	31	3	339	2	29	*722	*1970	2230

NOTIFICATIONS ON SCHEDULE A—Excluding Duplicates.																														Number of Cases Notified on Form I (Admissions).		Number of Cases notified on Form II (Dis- charges from Institu- tions).	
PULMONARY.														NON-PULMONARY.														Total Pul- monary and Non- Pul- monary.	Public Assist- ance Hospi- tals.	Sana- toria.			
SEX.	AGE-GROUP—YEARS.													TOTAL M. & F.	AGE-GROUP—YEARS.																TOTAL M. & F.		
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	TOTAL.	TOTAL M. & F.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	TOTAL.	TOTAL M. & F.							
Thirteen weeks ended 28th March, 1936	{	M. ...	1	4	5	11	22	30	34	49	16	6	178	}	303	3	22	16	15	6	6	10	2	1	4	...	85	}	185	488	26	250	264
		F. ...	1	...	6	15	29	37	19	8	5	5	125		2	18	14	15	7	13	15	7	5	3	1	100							
Thirteen weeks ended 27th June, 1936	{	M.	3	...	16	19	48	37	35	25	8	191	}	330	...	24	38	20	10	9	7	7	3	3	2	123	}	215	545	18	318	309
		F. ...	1	1	5	24	28	35	20	12	8	5	139		1	10	16	13	9	5	19	6	6	4	3	92							
Thirteen weeks ended 26th September, 1936	{	M. ...	1	3	2	12	22	29	31	38	26	2	166	}	318	1	18	15	13	7	8	7	1	4	1	2	77	}	153	471	14	317	323
		F. ...	1	2	4	19	36	46	21	13	5	5	152		1	9	14	15	13	9	9	3	1	...	2	76							
Thirteen weeks ended 26th December, 1936	{	M.	2	3	12	16	36	28	28	29	5	159	}	297	...	23	17	12	9	11	9	4	1	2	5	93	}	169	466	12	263	278
		F. ...	1	2	11	16	27	36	21	12	6	6	138		...	13	10	12	6	10	12	6	4	2	1	76							
Total ...	{	M. ...	2	12	10	51	79	143	130	150	96	21	694	}	*1248	4	87	86	60	32	34	33	14	9	10	9	378	}	*722	*1970	70	1148	1174
		F. ...	4	5	26	74	120	154	81	45	24	21	554		4	50	54	55	35	37	55	22	16	9	7	344							

* Corrected figures after deducting 44 pulmonary and 29 non-pulmonary cases notified in error by practitioners.

TABLE C.

ADMINISTRATIVE COUNTY OF LANCASTER.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

ANALYSIS OF THE NOTIFICATIONS ON SCHEDULE A (EXCLUDING DUPLICATES) RECEIVED DURING THE FIFTY-TWO WEEKS
ENDED 26TH DECEMBER, 1936. †

(Extracted from Weekly Returns of District Medical Officers of Health.)

AGE—YEARS.		0 — 1			1 — 5			5 — 10			10 — 15			15 — 20			20 — 25			25 — 35			35 — 45			45 — 55			55 — 65			65 & over.			TOTAL.			...	
SEX.		Col.	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	Col.			
PULMONARY—																																							
Lungs only		1				2	4	6	12	5	17	10	26	36	51	74	125	79	120	199	141	150	291	126	80	206	148	44	92	94	23	117	20	21	41	683	547	1230	1
Lungs and Larynx		2																			1	1	2	4		4	1	1	1	1	1	1	1		8	2	10	2	
Larynx		3																			1	1	2		1	1	1	1	2	1	1				3	3	6	3	
Bronchial Glands		4																																				4	
Mediastinal Glands		5																				2	2														2	5	
PULMONARY TOTAL		6				2	4	6	12	5	17	10	26	36	51	74	125	79	120	199	143	154	297	130	81	211	150	45	195	96	24	120	21	21	42	694	554	1248	6
*Cases—Pulmonary and Non-Pulmonary combined																																							
NON PULMONARY—																																							
Head—																																							
(Incl. Middle Ear)		7																																				7	
Trunk—																																							
Ribs and Sternum		8											1	1		1	1		1		1	2	3											2	5	7	8		
Spine		9				6	4	10	4	3	7	3	3	6	1		1	4	1	5	1	2	4	2	2	4		2	2	1	1	1	2	3	24	19	43	9	
Arm—																																							
Shoulder		10				2		2	1		1										1	1								1		1			4	1	5	10	
Scapula		11																																				11	
Humerus		12																																				12	
Elbow		13											1	1		1	1																1		1	2	3	13	
Radius		14																																				14	
Ulna		15											1	1																					1		1	15	
Hand and Wrist		16				1	1	2	1		1						1		1		1	1												3	2	5	16		
Leg—																																							
Hip and Pelvis		17				4	4	8	8	4	12	2		2	3	2	5		1	1	1	2	3	2	1	3	1		1	2		2	1		1	24	14	38	17
Femur		18																																				18	
Knee		19				4	5	9	4		4	1	1	2																						1	1	2	
Tibia		20					1	1				1		1																						1	1	2	
Fibula		21																																				21	
Foot and Ankle		22							1		1	1		1	1		1	1		1		1												1		7	7	22	
Two or more different Joints		23												1		1	1		1	1																1	2	3	
Not classified		24				1		1					1	1		2	1		1	1																2	5	7	
ABDOMINAL																																							
Intestines		25	1		1	1		1				1	1	2		1	1	1		1	1	3	4	1	2	3	1		1	1		1				8	7	15	
Peritoneum		26	1		1	10	4	14	6	3	9	6	3	9	5	3	8	3	5	8	3	6	9		1	1									34	27	61		
Mesenteric Glands		27				2		2			1	1		3	3		1	1		1	2	1	3		1	1								5	7	12			
Bladder		28																																				28	
Fallopian Tube		29																																				29	
Kidney		30								2	2					1		2	3	5	1	1	2	2		2		1	1						6	7	13		
Prostate		31																																				31	
Suprarenal		32																				1														1	1	32	
Testicle and Epididymis		33													2		2	5		5	4		4	4		4	2		2	1		1	1		1	19		19	
Not classified (two or more)		34																	1	1		4	4		2	2	1		1						1	7	8		
MENINGITIS (Brain)		35	1	1	2	13	9	22	5	3	8	2	1	3	1	1	2	1	1	2				1		1			1						25	16	41		
MILIARY (Generalised)		36																																			1	1	
SKIN (Lupus)		37					1	1	1		1	2	1	3				1	3	4	7	6	13		2	2		2	2	1	2	3	1	1	2	13	18		
PERIPHERAL GLANDS																																							
Axillary		38										1	1	2	1		1																			2	1		
Cervical		39	1	3	4	40	20	60	55	37	92	38	36	74	10	22	32	9	20	29	7	21	28	2	6	8		6	6	1	3	4	1	1	2	164	175		
Inguinal		40										1	1	2																					1	1	2		
MISCELLANEOUS		41				3	1	4		1	1		1	1	5	1	6	3		3	2	4	6		2	2	1	2	3		1	1	2		2	16	13		
NON-PULMONARY TOTAL		42	4	4	8	87	50	137	86	54	140	60	55	115	32	35	67	34	37	71	33	55	88	14	22	36	9	16	25	10	9	19	9	7	16	378	344		
GRAND TOTAL		43	4	4	8	89	54	143	98	59	157	70	81	151	83	109	192	113	157	270	176	209	385	144	103	247	159	61	220	106	33	139	30	28	58	1072	898		

TABLE D.

ADMINISTRATIVE COUNTY OF LANCASTER.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

MALE AND FEMALE NOTIFIED CASES IN THE ADMINISTRATIVE COUNTY DURING THE YEARS 1916 TO 1936.

PULMONARY TUBERCULOSIS.															NON-PULMONARY TUBERCULOSIS.														
YEAR.	Sex.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	Total.	Total* M. & F.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	Total.	Total* M. & F.		
1916	M	1	31	71	77	121	157	331	296	190	96	36	1407	2689	20	127	135	99	65	42	47	34	12	13	5	599	1180		
	F	2	24	81	96	163	186	345	220	98	52	13	1282		8	63	122	114	85	46	65	41	19	11	2	581			
1917	M	4	20	77	62	113	104	262	268	190	90	30	1220	2375	21	116	109	105	61	23	42	39	8	9	1	525	1062		
	F	2	22	90	100	129	155	296	185	107	50	19	1155		7	79	97	98	89	59	49	25	23	6	5	537			
1918	M	3	35	55	59	149	108	360	317	232	98	28	1375	2534	14	75	103	65	60	19	29	16	14	7	2	404	895		
	F	1	24	69	74	133	166	297	207	117	52	13	1159		10	75	84	92	80	46	46	29	9	6	4	481			
1919	M	2	22	53	55	94	107	238	212	165	91	17	1056	2105	13	59	97	80	53	26	31	22	19	12	4	407	847		
	F	5	14	54	80	123	161	261	184	99	41	24	1049		10	59	98	76	61	43	41	29	11	7	5	449			
1920	M	2	24	56	63	94	120	281	249	160	90	14	1153	2084	31	62	107	108	68	26	35	23	16	11	5	492	968		
	F	2	20	53	71	115	122	264	147	84	36	17	931		12	63	86	78	62	46	52	34	23	16	1	476			
1921	M	1	17	43	47	94	133	222	225	162	84	19	1047	2044	12	69	110	84	53	32	41	23	17	6	4	442	899		
	F	...	12	53	77	133	160	255	156	82	50	20	997		15	62	89	81	65	41	53	15	21	9	6	457			
1922	M	3	16	38	47	83	120	227	190	148	99	27	998	1863	18	101	111	79	55	37	39	22	13	7	3	485	956		
	F	4	15	45	57	133	135	202	146	61	42	23	865		13	77	80	95	61	45	50	24	14	7	5	471			
1923	M	2	10	41	43	83	132	236	207	147	94	13	1007	1937	18	115	134	105	75	35	45	22	14	15	6	584	1188		
	F	1	14	43	60	115	149	251	149	83	49	16	930		14	103	110	107	68	60	64	31	28	14	5	604			
1924	M	...	27	37	52	105	110	203	199	197	97	18	1045	1972	19	123	92	92	95	35	43	25	17	12	3	556	1120		
	F	3	12	29	55	144	139	223	169	94	49	10	927		6	99	87	94	80	55	72	30	17	11	13	564			
1925	M	...	22	32	38	81	115	212	200	192	74	24	990	1846	17	103	106	73	58	37	53	26	15	12	5	510	1027		
	F	3	10	24	44	144	153	198	136	85	34	25	856		9	85	84	91	82	41	57	33	18	10	6	517			
1926	M	1	9	27	40	91	113	210	198	158	110	23	980	1828	10	99	97	76	75	29	35	32	16	7	3	470	953		
	F	2	12	41	47	114	169	224	120	68	38	13	848		19	83	94	51	67	56	51	34	17	6	5	483			
1927	M	1	11	47	39	113	111	197	187	185	85	19	997	1794	12	101	131	87	66	38	40	18	13	4	7	517	1045		
	F	...	13	37	49	129	128	195	113	71	51	11	797		15	84	95	81	61	47	75	33	20	11	6	528			
1928	M	1	7	31	20	70	106	187	163	176	82	27	870	1660	16	82	114	66	67	43	40	15	14	10	7	474	956		
	F	...	6	33	32	126	147	195	125	62	44	20	790		13	69	100	70	56	63	50	27	21	8	5	482			
1929	M	4	7	32	17	80	99	160	180	165	76	23	843	1517	17	98	99	67	52	37	40	22	16	7	5	460	913		
	F	...	7	18	23	111	130	186	99	53	28	19	674		3	55	92	51	54	48	63	36	22	15	4	453			
1930	M	1	5	14	27	66	106	189	174	159	82	22	845	1527	6	78	105	69	67	28	45	18	12	12	7	447	982		
	F	...	3	13	29	104	122	186	107	61	37	20	682		12	67	100	80	63	63	71	35	28	13	3	535			
1931	M	2	8	15	18	73	118	153	159	161	89	25	823	1460	13	67	78	63	63	34	40	15	20	10	7	410	862		
	F	...	7	10	27	99	120	149	109	57	38	21	637		8	55	77	62	69	55	55	37	16	12	6	452			
1932	M	1	2	14	20	73	105	183	146	142	108	20	814	1477	7	67	70	54	38	41	34	20	22	17	6	376	825		
	F	...	3	19	33	97	146	160	92	58	41	14	663		7	43	86	70	63	53	63	24	19	15	6	449			
1933	M	2	4	10	19	70	84	186	171	155	85	27	813	1453	10	94	76	41	36	34	41	23	10	13	5	383	780		
	F	...	4	10	26	83	101	201	102	61	29	21	640		1	65	69	70	40	37	60	32	9	6	8	397			
1934	M	1	3	4	8	47	99	161	156	139	73	25	716	1315	10	60	79	61	36	22	43	19	18	7	5	360	774		
	F	2	9	11	14	84	135	163	87	50	33	11	599		12	46	69	6	63	36	65	32	15	6	5	414			
1935	M	...	6	8	14	61	97	152	145	122	81	34	720	1305	4	59	62	52	8	31	30	24	14	11	4	329	672		
	F	...	6	6	21	59	121	177	91	52	45	7	585		6	54	57	44	52	42	47	20	7	7	7	343			
1936	M	...	2	12	10	51	79	143	130	150	96	21	694	1248	4	87	86	60	32	34	33	14	9	10	9	378	722		
	F	...	4	5	26	73	120	154	81	45	24	21	554		4	59	54	55	35	37	55	22	16	9	7	344			

* Corrected figures from 1922 after deducting the following cases found to be non-tuberculous and notifications cancelled:— 1922: 14 pulmonary, 12 non-pulmonary; 1923: 33 pulmonary, 31 non-pulmonary; 1924: 57 pulmonary, 83 non-pulmonary; 1925: 83 pulmonary, 49 non-pulmonary; 1926: 61 pulmonary, 41 non-pulmonary; 1927: 68 pulmonary, 51 non-pulmonary; 1928: 63 pulmonary, 52 non-pulmonary; 1929: 61 pulmonary, 44 non-pulmonary; 1930: 63 pulmonary, 55 non-pulmonary; 1931: 38 pulmonary, 49 non-pulmonary; 1932: 40 pulmonary, 45 non-pulmonary; 1933: 48 pulmonary, 51 non-pulmonary; 1934: 38 pulmonary, 51 non-pulmonary; 1935: 48 pulmonary, 40 non-pulmonary; and 1936: 44 pulmonary, 29 non-pulmonary.

APPENDIX II.

NOTIFICATION OF TUBERCULOSIS CASES.

Since 1st February, 1913, tuberculosis—both pulmonary and other forms—has been compulsorily notifiable under the Public Health (Tuberculosis) Regulations.

Tables B and C, here inserted, analyse the notifications received, giving the part of the body affected and the age-groups.

Table D, also inserted, compares the male and female notifications since 1915.

TABLE 41.—*Deaths of 233 persons notified as suffering from pulmonary tuberculosis in 1936 which took place within three months of the date of notification.*

Period between date of case notification and death.	Certified cause of death.			Total.
	Pulmonary.		Non- pulmonary	
	Primary.	Secondary.		
Under 1 week	51	2	11	64
1 to 2 weeks	27	1	1	29
2 to 3 weeks	16	—	2	18
3 to 4 weeks	18	1	2	21
1 to 2 months	54	1	—	55
2 to 3 months	46	—	—	46
Total under 3 months ...	212	5	16	233
<div>217</div>				

Included in the above table are 34 deaths which occurred outside the County area.

In addition to the foregoing 233 deaths which occurred within three months of notification, in 14 instances (5 pulmonary and 9 non-pulmonary) death took place *before* the actual receipt of the notification, against 11 (4 pulmonary and 7 non-pulmonary) in the preceding year.

TABLE 42.—*Actual number of deaths from pulmonary and non-pulmonary tuberculosis since 1918 not previously notified under the Public Health (Tuberculosis) Regulations.*

Year.	Non-notified fatal cases.		
	Pulmonary tuberculosis.	Non-pulmonary tuberculosis.	Total.
1918	303	137	440
1919	221	104	325
1920	177	122	299
1921	135	96	231
1922	105	83	188
1923	85	74	159
1924	64	65	129
1925	67	57	124
1926	58	32	90
1927	54	42	96
1928	56	51	107
1929	62	61	123
1930	46	61	107
1931	61	51	112
1932	37	28	65
1933	45	31	76
1934	35	46	81
1935	35	31	66
1936	46	24	70

The 70 deaths in 1936 of cases not previously notified under the Regulations are further analysed below :—

TABLE 43.

	Cause of death.			Total.
	Pulmonary.		Non-pulmonary.	
	Primary.	Secondary.		
Deaths of persons at private addresses	37	1	11	49
Deaths in County mental hospitals of persons belonging to County area ...	—	—	—	—
Deaths in Public Assistance hospitals of persons belonging to County area ...	4	—	6	10
Deaths in other public institutions of persons belonging to County area...	4	—	7	11
	45	1		
Total	46		24	70

During 1936, 116 pulmonary and 60 non-pulmonary deaths occurred outside the County area of persons usually residing in the Administrative County. Of these, 110 pulmonary and 59 non-pulmonary occurred in public institutions. In 62 instances no case notification could be traced. These are not included in Table 43.

APPENDIX III.

CENSUS OF TUBERCULOUS CASES on the dispensary registers on the 31st December, 1936 (inclusive of 944 patients in sanatoria and hospitals).

Dis- pensary area.	Sex.	Number of cases under supervision on 31-12-36.							Number of doubtful cases on 31-12-36.
		Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.	Number of cases per 1,000 of population:		
		Under 15 years of age.	15 years and over.	Under 15 years of age.	15 years and over.		Pulm.	Non-pul.	
No. 1 ...	M. F.	9 11	216 185	118 91	99 156	885	1.66	1.83	4
No. 2 ...	M. F.	4 9	327 283	79 94	144 173	1,113	1.90	1.49	5
No. 3 ...	M. F.	10 9	516 347	121 87	172 217	1,479	2.35	1.59	—
No. 4 ...	M. F.	6 7	484 430	102 89	161 198	1,477	2.52	1.49	—
No. 5 ...	M. F.	21 13	377 281	123 98	83 114	1,113	2.43	1.46	7
Furness...	M. F.	7 13	75 68	13 23	31 30	260	4.28	2.55	3
Fylde ...	M. F.	4 3	114 97	58 55	30 53	414	2.47	2.22	2
Wigan County	M. F.	17 5	154 142	79 62	81 111	661	2.99	3.04	11
TOTAL ...	M. F.	78 80	2,263 1,836	693 599	801 1,052	7,402	2.30	1.70	32
		4,257		3,145		4.01			

The populations of the dispensary areas were :—

Area No. 1 ... 252,621; Area No. 2 ... 327,593; Area No. 3 ... 375,047; Area No. 4 ... 366,838;

Area No. 5 ... 285,199; Furness ... 38,022; Fylde ... 88,170; Wigan County 109,410.

Total for County ... 1,842,900.

APPENDIX III (contd.).

ANALYSIS OF CASES on the dispensary registers on the 31st December, 1936.

(a) PULMONARY TUBERCULOSIS.

Age-groups.	Sex.	T.B. minus.		T.B. plus 1.		T.B. plus 2.		T.B. plus 3.		TOTAL.	
		Active.	Quies.	Active.	Quies.	Active.	Quies.	Active.	Quies.	Active.	Quies.
0-5 years ...	M.	1	3	—	—	—	—	—	—	1	3
	F.	1	—	—	—	—	—	—	—	1	—
5-15 years ...	M.	25	45	3	—	1	—	—	—	29	45
	F.	19	46	3	—	5	1	5	—	32	47
15-25 years ...	M.	55	115	34	20	113	34	21	1	223	170
	F.	74	104	33	23	184	28	25	3	316	158
25-35 years ...	M.	46	100	45	54	207	87	20	8	318	249
	F.	77	117	69	42	225	70	20	3	391	232
35-45 years ...	M.	51	82	43	46	190	62	26	10	310	200
	F.	38	83	28	29	118	45	22	2	206	159
45-55 years ...	M.	50	91	38	36	161	44	24	2	273	173
	F.	25	54	18	19	59	37	9	1	111	111
55-65 years ...	M.	52	43	17	18	92	30	14	7	175	98
	F.	21	23	9	7	41	14	5	—	76	44
65 and over ...	M.	10	13	4	2	29	12	2	2	45	29
	F.	6	8	2	3	7	3	3	—	18	14
All ages ...	M.	290	492	184	176	793	269	107	30	1,374	967
	F.	261	435	162	123	639	198	89	9	1,151	765
GRAND TOTAL ...		1,478		645		1,899		235		4,257	

(b) NON-PULMONARY TUBERCULOSIS.

Age-groups.	Sex.	Bones and joints (excluding spine).		Spine.		Abdomen.		Other organs.		Peripheral glands.		Skin.		TOTAL.	
		Act.	Quies.	Act.	Quies.	Act.	Quies.	Act.	Quies.	Act.	Quies.	Act.	Quies.	Act.	Quies.
0-5 years ...	M.	17	6	9	—	5	7	1	1	21	34	—	—	53	48
	F.	11	2	8	2	4	4	1	1	19	27	1	—	44	36
5-15 years ...	M.	60	55	22	25	14	41	—	1	120	241	5	8	221	371
	F.	36	55	15	26	11	29	3	6	97	222	11	8	173	346
15-25 years ...	M.	30	57	16	18	7	32	11	9	33	104	23	17	120	237
	F.	26	43	9	11	16	33	3	3	49	180	19	11	122	281
25-35 years ...	M.	22	36	8	17	5	7	9	15	20	41	20	6	84	122
	F.	17	29	13	12	15	21	9	13	35	102	38	22	127	199
35-45 years ...	M.	15	16	10	7	3	2	11	16	5	14	17	6	61	61
	F.	12	12	4	13	2	7	6	6	13	26	26	13	63	77
45-55 years ...	M.	9	9	4	10	1	2	7	4	—	4	4	—	25	29
	F.	9	10	7	6	4	4	3	5	12	8	21	11	56	44
55-65 years ...	M.	9	5	3	2	2	—	4	1	1	5	11	2	30	15
	F.	5	4	2	2	1	—	1	—	4	8	21	4	34	18
65 and over ...	M.	7	3	1	—	—	—	1	2	1	—	2	—	12	5
	F.	8	3	2	2	1	1	1	—	—	2	10	1	22	9
All ages ...	M.	169	187	73	79	37	91	44	49	201	443	82	39	606	888
	F.	124	158	60	74	54	99	27	34	229	575	147	70	641	1,010
GRAND TOTAL...		638		286		281		154		1,448		338		3,145	

APPENDIX IV.

HOUSING CONDITIONS of patients in each dispensary area at the end of 1936.

	Pulmonary cases considered infectious.		Pulmonary cases considered not infectious.		Non-pulmonary cases.	
	Under 15 years.	15 years & over.	Under 15 years.	15 years & over.	Under 15 years.	15 years & over.
Patients occupying a separate bedroom :						
Area No. 1	2	156	7	120	62	107
Area No. 2	—	165	1	134	20	84
Area No. 3	1	285	5	227	36	142
Area No. 4	1	309	4	323	54	107
Area No. 5	1	246	7	161	63	74
Furness Area	—	29	3	48	9	28
Fylde Area	—	45	1	65	12	21
Wigan County Area	1	77	6	73	23	54
TOTAL	6	1,312	34	1,151	279	617
Patients occupying a separate bed but not a separate bedroom :						
Area No. 1	2	35	6	17	68	26
Area No. 2	2	138	3	71	82	87
Area No. 3	2	117	4	121	106	75
Area No. 4	2	52	3	79	65	60
Area No. 5	—	56	9	49	85	29
Furness Area	1	12	16	24	23	13
Fylde Area	—	21	4	35	47	28
Wigan County Area	—	38	18	44	68	50
TOTAL	9	469	63	440	544	368
Patients not occupying a separate bed :						
	*	†				
Area No. 1	—	9	3	64	79	122
Area No. 2	—	13	7	89	71	146
Area No. 3	—	14	7	99	66	172
Area No. 4	—	4	3	147	72	192
Area No. 5	1	30	16	119	73	94
Furness Area	—	4	—	26	4	20
Fylde Area	—	—	2	45	54	34
Wigan County Area	—	1	7	63	50	88
TOTAL	1	75	45	652	469	868
GRAND TOTAL ...	16	1,856	142	2,243	1,292	1,853

* This child was isolated in a pulmonary hospital at the end of 1936.

† Of the adult infective patients without a separate bed, there were in sanatoria or pulmonary hospitals at the end of 1936 the following patients :—

Area No. 1 ... 2; Area No. 2 ... 3; Area No. 3 ... 2;
Area No. 5 ... 7; Furness Area ... 1; Total ... 15.

APPENDIX V.

Return showing the WORK OF THE DISPENSARIES during the year 1936.

(Tables A and B of Memorandum 37/ T (Revised) of the Ministry of Health).

DIAGNOSIS.	PULMONARY.				NON-PULMONARY.				TOTAL.				GRAND TOTAL.	
	Adults.		Children.		Adults.		Children.		Adults.		Children.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
A.—NEW CASES examined during the year (excluding contacts):														
(a) Definitely tuberculous ...	585	421	15	23	123	164	179	148	708	585	194	171	1,658	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	6	14	2	5	27	
(c) Non-tuberculous... ..	—	—	—	—	—	—	—	—	1,152	1,055	356	292	2,855	
B.—CONTACTS examined during the year:														
(a) Definitely tuberculous ...	9	16	1	3	1	4	6	1	10	20	7	4	41	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	—	1	2	2	5	
(c) Non-tuberculous... ..	—	—	—	—	—	—	—	—	189	301	211	230	931	
C.—CASES written off the dispensary registers as:														
(a) Recovered... ..	106	82	4	3	126	175	77	80	232	257	81	83	653	
(b) Non-tuberculous (including any such cases previously diagnosed and entered on the dispensary registers as tuberculous)	—	—	—	—	—	—	—	—	1,354	1,365	574	257	3,820	
D.—NUMBER OF CASES on dispensary registers on 31st December, 1936:														
(a) Definitely tuberculous ...	2,263	1,836	78	80	801	1,052	633	599	3,064	2,888	771	679	7,402	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	6	15	4	7	32	
<hr/>														
1. Number of cases on dispensary registers on 1st January, 1936	7,422				7. Number of consultations with medical practitioners:—									
				(a) Personal								606		
				(b) Other								6,435		
2. Number of cases transferred from other areas and cases returned after discharge under Head 3 in previous years	264				8. Number of visits by tuberculosis officers to homes (including personal consultations)								4,628	
3. Number of cases transferred to other areas, cases not desiring further assistance under the scheme, and cases "lost sight of"	491				9. Number of visits by nurses or health visitors to homes for dispensary purposes								42,046	
4. Cases written off during the year as dead (all causes)	805				10. Number of									
				(a) Specimens of sputum, etc., examined								5,405		
				(b) X-ray examinations made in connection with dispensary work								10,469		
5. Number of attendances at the dispensaries (including contacts)	24,754				11. Number of "recovered" cases restored to dispensary registers, and included in A(a) and A(b) above								52	
6. Number of insured persons under domiciliary treatment on the 31st December	1,286				12. Number of "T.B. plus" cases on dispensary registers on 31st December ...								2,779	

Number of Dispensaries for the treatment of Tuberculosis (excluding centres used only for special forms of treatment).

Provided by the Council ... 24

Provided by Voluntary Bodies ... —

APPENDIX VI.

Return showing the extent of RESIDENTIAL TREATMENT AND OBSERVATION during the year 1936 in institutions (other than Poor Law institutions) approved for the treatment of tuberculosis.

(Table D of Memorandum 37/T (Revised) of the Ministry of Health).

			In institutions on Jan. 1.	Admitted during the year.	Discharged during the year.	Died in the institutions.	In institutions on Dec. 31.
Number of doubtfully tuberculous cases admitted for observation	Adults	M.	7	61	59	3	6
		F.	2	30	27	—	5
	Children.		8	47	45	—	10
	Total...		17	138	131	3	21
Number of patients suffering from pulmonary tuberculosis	Adults	M.	342	640	512	141	329
		F.	279	500	385	85	309
	Children.		29	45	34	1	39
	Total...		650	1,185	931	227	677
Number of patients suffering from non-pulmonary tuberculosis	Adults	M.	50	137	114	13	60
		F.	46	125	123	9	39
	Children.		151	184	182	6	147
	Total...		247	446	419	28	246
GRAND TOTAL			914	1,769	1,481	258	944

APPENDIX VII.

Return showing the extent of RESIDENTIAL TREATMENT provided during the year 1936 IN POOR LAW INSTITUTIONS for persons chargeable to the Council.

(Table E of Memorandum 37/T (Revised) of the Ministry of Health).

			In institutions on Jan. 1.	Admitted during the year.	Discharged during the year.	Died in the institutions.	In institutions on Dec. 31.
Number of patients suffering from pulmonary tuberculosis	Adults	M.	17	79	59	22	15
		F.	10	47	38	12	7
	Children.		—	6	3	3	—
	Total...		27	132	100	37	22
Number of patients suffering from non-pulmonary tuberculosis ...	Adults	M.	8	25	19	9	5
		F.	12	22	23	5	6
	Children.		10	41	32	17	2
	Total		30	88	74	31	13
GRAND TOTAL			57	220	174	68	35

APPENDIX VIII.

Return showing the results of OBSERVATION OF DOUBTFULLY TUBERCULOUS CASES discharged during the year 1936 from institutions approved for the treatment of tuberculosis.

(Table F of Memorandum 37/T (Revised) of the Ministry of Health).

Diagnosis on discharge from observation.	For pulmonary tuberculosis.						For non-pulmonary tuberculosis.						TOTALS.		
	Stay under 4 weeks.			Stay over 4 weeks.			Stay under 4 weeks.			Stay over 4 weeks.					
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.
Tuberculous	3	3	3	17	2	4	—	—	7	4	1	7	24	6	21
Non-tuberculous	9	4	—	14	11	8	2	2	2	4	3	7	29	20	17
Doubtful	3	1	2	2	—	1	1	—	2	—	—	2	6	1	7
Died	1*	—	—	1**	—	—	—	—	—	1†	—	—	3	—	—
Totals	16	8	5	34	13	13	3	2	11	9	4	16	62	27	45

* Cause of death :—Hæmoptysis, pulmonary abscess and pneumonia.

** " " " :—Annular fibrillation, mitral stenosis and rheumatic fever.

† " " " :—Toxæmia due to streptococcal tonsillitis ; lung abscess.

APPENDIX IX.

Return showing the IMMEDIATE RESULTS OF TREATMENT of definitely tuberculous patients discharged during the year 1936 from institutions approved for the treatment of tuberculosis.

(This table is based on Table G of Memorandum 37/T (Revised) of the Ministry of Health).

Classification on admission to the institution.		Condition at time of discharge.	Duration of residential treatment in the institution.															GRAND TOTALS.
			Under 28 days.			1-3 months.			3-6 months.			6-12 months.			More than 12 months.			
			M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
PULMONARY TUBERCULOSIS.	T.B. minus.	Quiescent . .	—	—	—	5	7	—	17	23	3	8	14	7	3	1	5	93
		Improved . .	3	2	—	12	9	—	24	17	1	6	7	3	2	3	—	89
		N. M. I. . .	4	4	1	—	2	1	3	1	—	—	—	1	—	1	—	18
		Died . .	2	—	—	5	1	—	1	—	—	3	—	—	1	—	—	13
	T.B. plus 1.	Quiescent . .	—	1	—	1	1	1	4	4	—	9	4	1	4	2	—	32
		Improved . .	3	2	—	7	4	—	13	5	—	7	14	—	2	3	—	60
		N. M. I. . .	—	1	—	3	2	—	2	1	—	—	—	—	1	2	—	12
		Died . .	1	1	—	5	2	—	1	—	—	1	2	—	4	1	—	18
	T.B. plus 2.	Quiescent . .	1	1	—	—	2	1	10	8	—	9	10	—	4	6	2	54
		Improved . .	3	—	—	30	17	—	65	36	—	56	51	—	35	17	1	311
		N. M. I. . .	15	9	1	24	13	1	17	15	—	25	15	—	6	10	—	151
		Died . .	18	4	—	21	15	—	15	15	—	10	6	—	11	9	—	124
	T.B. plus 3.	Quiescent . .	—	—	—	—	—	—	—	—	—	4	1	—	2	—	1	8
		Improved . .	—	—	—	10	4	—	8	5	—	13	7	—	7	2	1	57
		N. M. I. . .	3	2	—	10	3	1	6	5	—	5	8	—	1	1	1	46
		Died . .	15	7	—	14	11	1	6	3	—	2	5	—	5	3	—	72
TOTALS (pulmonary)			68	34	2	147	93	6	192	138	4	158	144	12	88	61	11	1,158
NON-PULMONARY TUBERCULOSIS.	Bones and joints.	Quiescent . .	—	1	—	4	4	7	3	4	4	4	4	11	8	6	42	102
		Improved . .	5	9	1	9	6	6	3	6	5	5	4	4	6	2	9	80
		N. M. I. . .	4	2	7	2	1	4	—	—	1	2	3	—	2	1	1	30
		Died . .	—	—	—	2	—	—	1	—	—	3	3	—	2	2	1	14
	Abdominal.	Quiescent . .	—	—	—	3	6	4	—	1	2	—	—	2	—	—	—	18
		Improved . .	2	3	1	3	2	2	—	1	1	—	—	—	—	—	2	17
		N. M. I. . .	—	—	2	—	1	1	—	—	—	1	—	—	—	—	—	5
		Died . .	—	1	2	1	—	1	—	—	—	—	—	—	—	1	—	6
	Other organs.	Quiescent . .	3	1	—	3	2	—	2	1	1	3	—	1	1	—	—	18
		Improved . .	10	6	1	5	2	—	—	1	—	3	1	—	—	1	1	31
		N. M. I. . .	2	1	—	2	—	1	—	—	—	—	—	—	—	—	—	6
		Died . .	1	—	2	1	—	—	—	—	—	1	2	—	—	—	—	7
	Peripheral glands.	Quiescent . .	1	4	3	2	2	14	2	—	2	—	1	3	—	—	3	37
		Improved . .	7	22	20	—	5	5	—	2	6	1	2	—	—	—	1	71
		N. M. I. . .	1	1	—	—	—	1	—	—	—	—	—	—	—	1	—	4
		Died . .	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
TOTALS (non-pulmonary) . .			36	51	39	37	31	46	11	16	22	24	20	21	19	14	60	447

N. M. I. = No material improvement.

"Died" comprises deaths in the institution only.

APPENDIX X.

Definitions observed in CLASSIFYING CASES and recording results of treatment (in accordance with Memorandum 37/T (Revised) of the Ministry of Health, extracts from which are quoted below).

CLASSIFICATION OF PATIENTS SUFFERING FROM TUBERCULOSIS.

For the purpose of the Annual Returns required under this Memorandum, and of the case records necessary to enable these returns to be completed, the following system of classification of cases and of recording results should be used :—

I.—All patients should be grouped according to their sex and age ; patients under 15 years of age should be classed as children, and those of 15 years and upwards as adults.

II.—Patients should then be classified according to the organs or parts affected as follows :—

- (1) Pulmonary tuberculosis (including tuberculosis of the pleura or intra-thoracic glands).
- (2) Non-pulmonary tuberculosis.

Patients suffering from both pulmonary and non-pulmonary tuberculosis should be classified as pulmonary cases.

III.—Patients suffering from pulmonary tuberculosis should be divided into :—

Class T.B. minus, *viz.*, cases in which tubercle bacilli have never been demonstrated in the sputum, pleural fluid, fæces, etc., and

Class T.B. plus, *viz.*, cases in which tubercle bacilli have at any time been found. It should be noted that a patient originally in Class T.B. minus must be transferred to Class T.B. plus at any stage in the course of treatment if and when tubercle bacilli are found, while on the other hand a patient who is once placed in Class T.B. plus can never be included in Class T.B. minus. Class T.B. plus should be further sub-divided into three groups as follows:—

Group 1.—Cases with slight constitutional disturbance, if any ; *e.g.*, there should not be marked acceleration of pulse nor elevation of temperature except of very transient duration ; gastro-intestinal disturbance or emaciation, if present, should not be excessive.

The obvious physical signs should be of very limited extent as follows : either present in one lobe only, and in the case of an apical lesion of one upper lobe, not extending below the second rib in front or not exceeding an equivalent area in any one lobe ; or where these physical signs are present in more than one lobe, they should be limited to the apices of the upper lobes, and should not extend below the clavicle and the spine of the scapula.

No complication (tuberculous or other) of prognostic gravity should be present. A small area of dry pleurisy should not exclude a case from this group.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration, with marked impairment of function, either local or general, and with little or no prospect of recovery.

All cases with grave complications (*e.g.*, diabetes, tuberculosis of intestine, etc.), whether those complications are tuberculous or not, should be classified in this group.

Group 2.—All cases which cannot be placed in Groups 1 and 3.

APPENDIX X (contd.).

IV.—Patients suffering from non-pulmonary tuberculosis should be classified according to the site of the lesion as follows :—

- (1) Tuberculosis of bones and joints.
- (2) Abdominal tuberculosis (*i.e.*, tuberculosis of peritoneum, intestines or mesenteric glands).
- (3) Tuberculosis of other organs.
- (4) Tuberculosis of peripheral glands.

Patients suffering from multiple lesions should be classified in one sub-group only, *viz.*, in that applicable to the case which stands highest in the immediately preceding list.

RESULTS OF TREATMENT.

The following terms should be used to describe the results of treatment :—

- “ QUIESCENT.”—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which sputum, if present, is free from tubercle bacilli.
- “ ARRESTED.”—Cases in which, if pulmonary, the disease has been “ quiescent ” for a period of at least two years, or, if non-pulmonary, the disease is “ quiescent ” and there is reason to believe that it is unlikely to recur.
- “ RECOVERED.”—Cases in which arrest of the disease has been maintained for at least three years.
-

APPENDIX XI.

Number of BEDS OCCUPIED BY COUNTY PATIENTS undergoing residential treatment for pulmonary and non-pulmonary tuberculosis on the 31st December, 1936.

Institution.	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.
	Adults.	Children.	Adults.	Children.	
<i>(a) Institutions for pulmonary tuberculosis.</i>					
Aitken Sanatorium, near Bury	53	—	—	—	53
Barrowmore Tuberculosis Sanatorium and Settlement, Great Barrow, Chester	30	—	2	1	33
Blencathra Sanatorium, Threlkeld, Cumberland	1	—	—	—	1
Brompton Hospital, London	1	—	—	—	1
Chadderton Pulmonary Hospital, near Oldham	43	1	—	—	44
Crossley Sanatorium, Frodsham, Cheshire	1	—	—	—	1
Eastby Sanatorium, near Skipton	—	13	—	6	19
Eccleston Hall Sanatorium, St. Helens	6	7	—	—	13
Elswick Sanatorium, near Kirkham	64	2	—	—	66
Fazakerley Sanatorium, Liverpool	1	—	—	—	1
Halifax Sanatorium, Shelf	7	—	—	—	7
Heath Charnock Pulmonary Hospital, near Chorley... ..	30	1	—	—	31
Hefferston Grange Sanatorium, Weaverham, Cheshire	1	—	—	—	1
High Carley Sanatorium, near Ulverston	109	—	—	—	109
Holy Cross Sanatorium, Haslemere, Surrey	1	—	—	—	1
King Edward VII Sanatorium, Midhurst, Sussex	2	—	—	—	2
Lancaster Pulmonary Hospital	34	—	—	—	34
Oubas House Children's Sanatorium, Ulverston	—	10	—	1	11
Papworth Village Settlement, Papworth Hall, Cambridge	1	—	—	—	1
Peel Hall Pulmonary Hospital, Little Hulton	57	—	—	—	57
Pemberton Pulmonary Hospital, Wigan	4	—	—	—	4
Prior Place, Camberley, Surrey	1	—	—	—	1
Rufford Pulmonary Hospital, near Ormskirk... ..	52	—	—	—	52
Springfield Sanatorium, Rochdale	18	—	—	—	18
University College Hospital, London	1	—	—	—	1
Westmorland Sanatorium, Meathop, Grange-over-Sands	6	—	—	—	6
Wilkinson Sanatorium, near Bolton	15	1	—	—	16
Withnell Pulmonary Hospital, near Chorley	41	—	—	—	41
Wolstenholme Pulmonary Hospital, Norden, Rochdale	27	—	—	—	27
Total	607	35	2	8	652
<i>(b) Training colonies.</i>					
Barrowmore Tuberculosis Sanatorium and Settlement, Great Barrow, Chester	5	—	1	—	6
British Legion Village, Preston Hall, Kent	2	—	—	—	2
Burrow Hill Sanatorium Colony, Frimley, Surrey	1	—	1	—	2
Derwen Cripples' College, Oswestry	—	—	3	—	3
Papworth Village Settlement, Papworth Hall, Cambridge	2	—	—	—	2
Total	10	—	5	—	15
<i>(c) Institution with accommodation for combined tuberculosis.</i>					
Wrightington Hospital, near Wigan	20	4	—	—	24
<i>(d) Beds occupied by observation cases.</i>					
Eastby Sanatorium, near Skipton	—	2	—	—	2
Elswick Sanatorium, near Kirkham	1	—	—	—	1
High Carley Sanatorium, near Ulverston	5	—	—	—	5
Liverpool Open-Air Hospital, Leasowe, Cheshire	—	—	1	—	1
Oubas House Children's Sanatorium, Ulverston	—	5	—	—	5
Wilkinson Sanatorium, near Bolton	1	—	—	—	1
Withnell Pulmonary Hospital, near Chorley	3	—	—	—	3
Wrightington Hospital, near Wigan	—	—	—	3	3
Total	10	7	1	3	21

APPENDIX XI (contd.).

Institution.	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.
	Adults.	Children.	Adults.	Children.	
<i>(e) Institutions for non-pulmonary tuberculosis.</i>					
Ashton-under-Lyne District Infirmary	—	—	1	1	2
Liverpool Open-Air Hospital, Leasowe, Cheshire ..	1	—	7	28	36
Liverpool Royal Infirmary	—	—	1	—	1
Manchester and Salford Hospital for Skin Diseases, Manchester	—	—	2	—	2
Manchester Royal Infirmary	—	—	1	—	1
Robert Jones and Agnes Hunt Orthopædic Hospital, Oswestry	—	—	1	2	3
Royal Liverpool Children's Hospital—Heswall, Cheshire	—	—	—	11	11
Royal Manchester Children's Hospital, Pendlebury ...	—	—	—	1	1
Royal Southern Hospital, Liverpool	—	—	1	—	1
Warwickshire Orthopædic Hospital for Children, Coleshill	—	—	—	1	1
Wrightington Hospital, near Wigan	—	—	78	95	173
Total	1	—	92	139	232
GRAND TOTAL					
	648	46	100	150	944
	694		250		

N.B.—The number of beds occupied fluctuates during the course of the year, there being a greater demand for beds in the summer than in the winter. In July, 1937, the beds occupied totalled 988, and in July, 1936, 976.

